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UCS 1000

R4.2

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About This Book

Overview

This document describes the procedures needed to perform full system administration for the following areas:

- The UNIX operating system
- The voice system
- Databases
- Switch interfaces

This document also describes the procedures needed to create and access system reports and to monitor the system.

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Intended Audiences

The primary audience for this document are system administrators. This includes:

- On-site technicians who perform system administration at the customer site
- End customers who choose to administer their own systems

Secondary audiences include the field support personnel.

We assume that the primary users of this book have completed the UCS 1000 R4.2 hardware installation and maintenance training course. See Using the CD-ROM Documentation on page xxxvi for more information.

How This Book Is Organized

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This document is designed to take you step by step through the system

Administration Procedures and Information

See Chapter 1, Administration Overview , to familiarize yourself with the user interface and the system administration process including the user interface and the menus.

See Chapter 2, UNIX Administration , for information about how to access the SYSADM menu and the procedures to perform basic UnixWare-level administration.

See Chapter 3, Voice System Administration , for information about how to access the Voice System Administration menu and a description of all the administrative options. This chapter also contains the reference and procedural information for the Configuration Management option.

See Chapter 4, Switch Interface Administration , for the procedures and reference information for administering the supported analog and digital switch interfaces.

See Chapter 5, Database Administration , for the procedures and reference

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See Chapter 7, Common Administration , for quick-reference information for some of the more common administrative tasks. Daily administration includes running system reports; performing common procedures such as system monitoring, media formatting, and backups; and administering the date and time.

Reference Material

See Appendix A, Summary of Commands, for an alphabetical list of the commands in the UCS 1000 R4.2 command language.

See the Glossary for help in identifying and defining commonly used terms and acronyms.

To Locate Specific Topics

This book includes an alphabetical index at the end for quick access to specific topics.

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Note: The screens shown in this book are examples only. The screens you see on your system may be similar, but not exactly the same in all cases.

Terminology

- The word “type” means to press the key or sequence of keys specified. For example, an instruction to type the letter “y” is shown as

  Type **y** to continue.

- The word “enter” means to type a value and then press the **ENTER** key on the keyboard. For example, an instruction to type the letter “y” and press **ENTER** is shown as

  Enter **y** to continue.

- The word “select” means to move the cursor to the desired menu item and then press **ENTER**. For example, an instruction to move the cursor to the start test option on the Network Loop-Around Test screen and then press **ENTER** is shown as

  Select

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- The system displays menus, screens, and windows. Menus (Figure 1) present options from which you can choose to view another menu, or a screen or window. Screens and windows both show (Figure 2 on page xxviii and Figure 3 on page xxix) and request (Figure 4 on page xxix and Figure 5 on page xxx) system information.

Figure 1. Example of a UCS 1000 R4.2 Menu

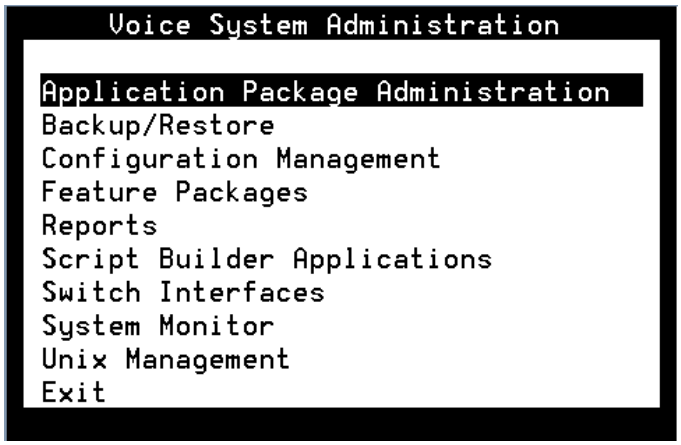

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Figure 2. Example of a UCS 1000 R4.2 Screen Showing Information

```
UnixWare Installation          Primary Hard Disk Partitioning

In order to install LINCS, you should reserve a UNIX system
partition (a portion of your hard disk's space) containing 100%
of the space on your primary hard disk. After you press 'ENTER'
you will be shown a screen that will allow you to create new
partitions, delete existing partitions or change the active
partition of your primary hard disk (the partition that your
computer will boot from).

WARNING: All files in any partition(s) you delete will be
destroyed. If you wish to attempt to preserve any files from an
existing UNIX system, do not delete its partitions(s).

The UNIX system partition that you intend to use on the primary
hard disk must be at lease 4200 MBs and labeled "ACTIVE."

Press 'ENTER' to continue
```

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Figure 3. Example of a UCS 1000 R4.2 Window Showing Information

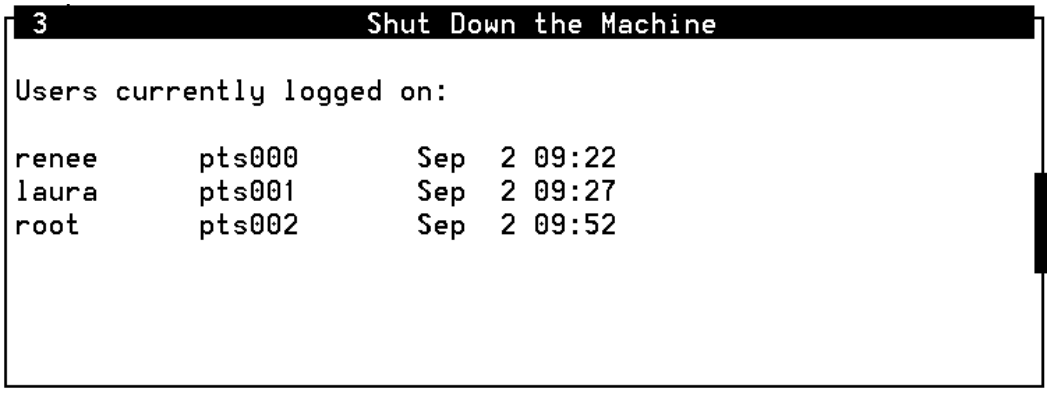

Figure 4. Example of a UCS 1000 R4.2 Screen Requesting Information

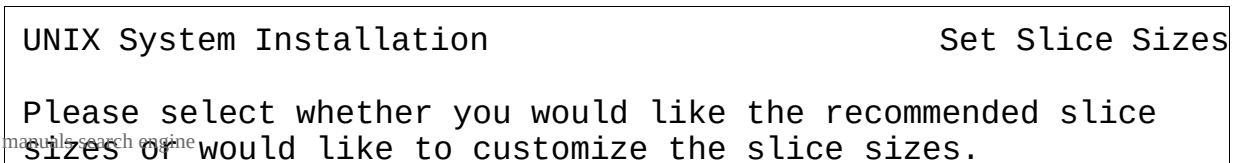
UNIX System Installation Set Slice Sizes
Please select whether you would like the recommended slice
sizes or would like to customize the slice sizes.

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Figure 5. Example of a UCS 1000 R4.2 Window Requesting Information

Keyboard and Telephone Keypad Representations

- Keys that you press on your terminal or PC are represented as capitalized **BOLD** text. For example, an instruction to press the Enter key is shown as

  Press **ENTER**.

- Two or three keys that you press at the same time on your terminal or PC (that is, you hold down the first key while pressing the second and/or third key) are represented as a series of small, capitalized **BOLD** text separated by the plus sign (**+**). For example, an instruction to press and hold “Alt” while typing the letter “d” is shown as

  Press **ALT+D**

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- Keys that you press on your telephone keypad are represented as **bold** text. For example, an instruction to press the first key on your telephone keypad is shown as

  Press **1** to record a message.

Screen Displays

- System messages, field names, and prompts that appear on the screen are shown in `typewriter text`, as shown in the following examples:
  - ~ Enter the number of ports to be dedicated to outbound traffic in the `Maximum Simultaneous Ports` field.
  - ~ Enter **y** in the `Message Transfer?` field.
  - ~ The system displays the following message:

    `Installation in progress.`
- The sequence of menu options that you must select to display a specific screen or submenu appears in a series of boxes.

  Example:

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In this example, you would access the Voice System Administration menu and select the Reports menu. From the Reports menu, you would then select the Message Log Report window.

Some Screen Simulations

Text in a simulated screen display appears in `typewriter text`.

Example:

```
            QuickStart - Data Recovery Rescue
Copyright(c) 1997-1999 by Enhanced Software Technologies, Inc.
      Serial# 8200-999                          Version: 1.3.17

   [Backup System]  [Verify System]  [Recover System]  [Duplicate Diskette]  [Configure QuickStart]  [Exit and Reboot]
```

Items That May or May Not Appear

Grayed-out type represents optional items that may or may not appear in a given display.

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Other Typography

Command Text

- Literal values, commands, and text that you type in or enter appear in **bold type**, as in the following examples:

  Example 1:

  Enter **change-switch-time-zone** at the `Enter command:` prompt.

  Example 2:

  Type **high** or **low** in the `Speed:` field.

- Command variables are shown in ***bold italic*** type when they are part of what you must type in, and in italics when they are not part of the command line, for example:

  Enter **ch ma *machine_name***, where *machine_name* is the name of the call delivery machine you just created.

- Command options are shown inside square brackets, for example:

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Indicates the presence of a hazard that if not avoided *can* cause death or severe personal injury.

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Indicates the presence of a hazard that if not avoided *will* cause death or severe personal injury.

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Documentation

Appendix A, “Documentation Guide,” in *UCS 1000 R4.2 System Description*, 585-313-209, provides an overview of all the books in the UCS 1000 R4.2 library that are mentioned in this book.

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3. Enter the page range you want to print, or select **All**. Note that the print page range is different from the page numbers on the documents (they print two to a page).
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1 Administration Overview

Overview

This chapter provides an overview of system administration and is designed to familiarize you with the UCS 1000 R4.2 user interface and the system administration process including:

- User interface overview
- User interface components
- The administration menus

User Interface Overview

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active. To return to the previous menu or window, you can cancel the active one.

UCS 1000 R4.2 User Interface

Administering the voice system through the administrative screens involves many activities, and all share a common user interface. Although the information on the screen changes often, the information arrangement does not change. The typical screen contents is as follows (Figure 6 on page 3):

- Menu and/or window
- Message line
- Function key labels

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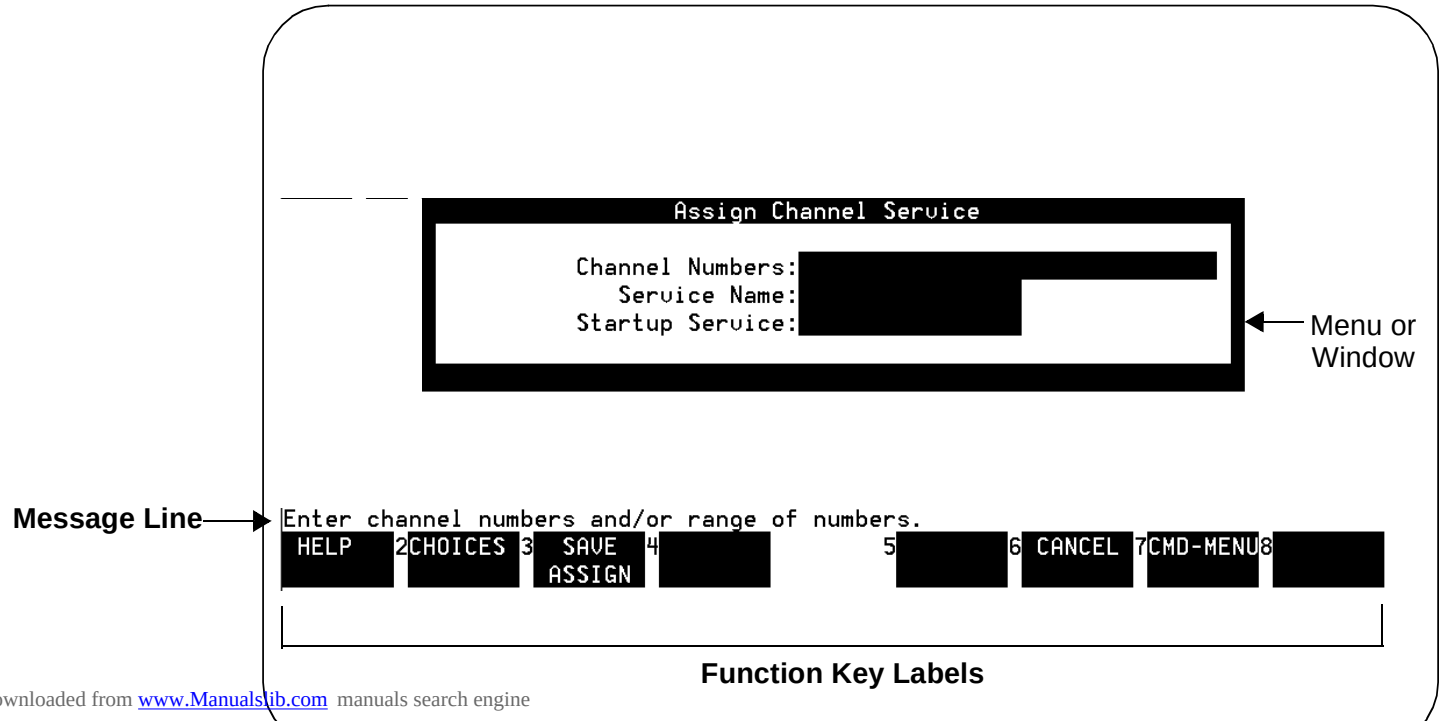
Figure 6. Sample UCS 1000 R4.2 System Screen



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Cursor Movement Keys

Table 1 lists the keys used to maneuver within a menu or window. They are referred to throughout this book as the cursor movement keys.

Table 1. Cursor Movement Keys

Type of Movement	Key
Move to next line in menu, list, or text; “wrap” from last item to first item in a menu or form	▼
Move to previous line in menu, list, or text; “wrap” from first item to last item in a menu or form	▲
Move down one “screenful”	**PgDw**
Move up one “screenful”	**PgUp**
Move to next field in a screen or window	**Tab**, or **Enter**
Move to previous field in a screen or window	**Shift**, or **Tab**

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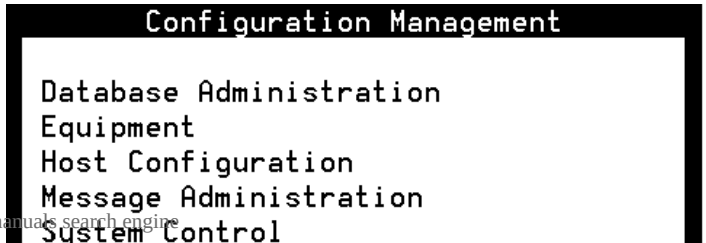
Menus and Windows

You use menus and windows to exchange information with the voice system. This exchange may involve activities such as making menu selections or populating fields. Since the display may contain more than one menu or window at the same time, each menu/window is outlined so that it is clear what information it contains. At any given time, only one menu or window on screen is designated as active.

Menus

A menu allows you to select an option that takes you to the next menu or window (Figure 7).

Figure 7. Sample Menu



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The components of a menu include:

- Title — The title describes the information contained within the menu, or the tasks you can accomplish using it. In this book, titles are shown with the first letter of each word capitalized, followed by the word *menu*, such as the *Configuration Management menu*.
- Scroll Indicator — The scroll bar indicates whether there is additional text to be displayed. The ▼ indicates there is more information to view below what is presently shown. The ▲ indicates there is more information to view above what is currently displayed. Not every menu has a scroll indicator.

Selecting a Menu Item

To select a menu item, highlight it using one of the following methods and then press **Enter**:

- Use the cursor movement keys to move the highlight bar:
  - Press ▼ to move the highlight bar down.

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- Type the first character(s) of the menu line. The system highlights the first menu item beginning with that letter. For example, in Figure 7 on page 5, type **S** to select `System Control`. If there is another menu item beginning with “s,” type more characters.

  The menu items are not case-sensitive; that is, typing **A** is the same as typing **a**. If you type a letter for which there is no matching item, the system “beeps” and does not move the highlight bar.

Windows

A window allows you to enter and view information, and can range in size. See Figure 8 and Figure 9 on page 8.

Figure 8. Sample Window

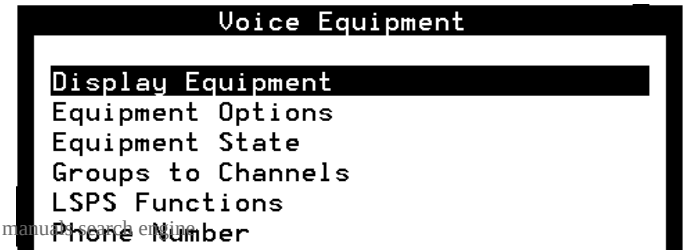

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Figure 9. Sample Window

The components of a window include:

- Title — The title describes the information contained within the window, or the tasks you can accomplish using it. In this book, titles are shown with the first letter of each word capitalized, followed by the word *window*, such as *Voice Equipment window*.
- Scroll Indicator — The scroll bar indicates whether there is additional text to be displayed. The ▼ indicates there is more information to view below what is presently shown. The ▲ indicates there is more information to view above what is currently displayed. Not every window has a scroll indicator.

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Populating Fields

There are three ways to enter information in a field, as described below.

- Type the first character or first few characters of the entry.

  With the cursor positioned on the field, begin to type the entry. As soon as you type enough characters to uniquely identify the desired entry, the system automatically supplies the remaining characters. If the entry is invalid, the system beeps and removes the invalid characters.

  For example, given the `Day:` field in Figure 10 on page 10, assume that valid entries are the names of the days in the week. When you type **M**, the system fills in the entire word *Monday* because there is only one valid entry that begins with *M*.

  However, if you type **S**, the system waits before filling in the day of the week because there are two valid entries that begin with *S* (Saturday and Sunday). At this point, if you type **a**, the system fills in the word *Saturday*. If you type **u**, the system fills in the word *Sunday*. This technique is not case-sensitive. In other words, typing either **M** or **m** in the above example

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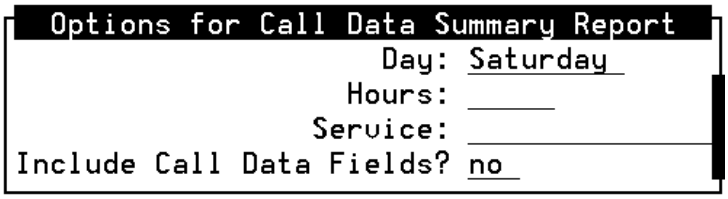
Figure 10. Fields in the Call Data Summary Report Window



- Type the entire entry.

  Move to the desired field and type the entire entry. While in a field, you can also edit the entry.

- Use the CHOICES screen selections.

  Press **F2** (Choices) to open a menu that shows the available choices for a field. Select an option as you would in a standard menu. The content of the CHOICES menu varies depending on the situation. Sometimes no CHOICES menu is available for a screen or window.

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Function Keys

Your keyboard has eight to twelve function keys. The system uses the first eight function keys, labeled **F1** through **F8**.

The boxed labels at the bottom of the display correspond to the function keys on your keyboard. Function keys are the means by which you command the system to perform a function within the active menu or window. The label describes the instruction that is sent to the system when you press the corresponding function key. The commands, and therefore the labels, that are available at any given time vary depending on the active menu or window. Menus and windows may have one or two rows of function key labels. See Figure 11 on page 12 for an example of a window with function key labels.

In Figure 11 on page 12 you press **F1** to access the Help screen for the System Monitor window. Also in Figure 11 on page 12, notice that the label for **F4** is blank. This indicates that no command is issued if you press the **F4** function key. If you press an inactive function key, the system beeps and the message line either indicates an undefined function key or continues to

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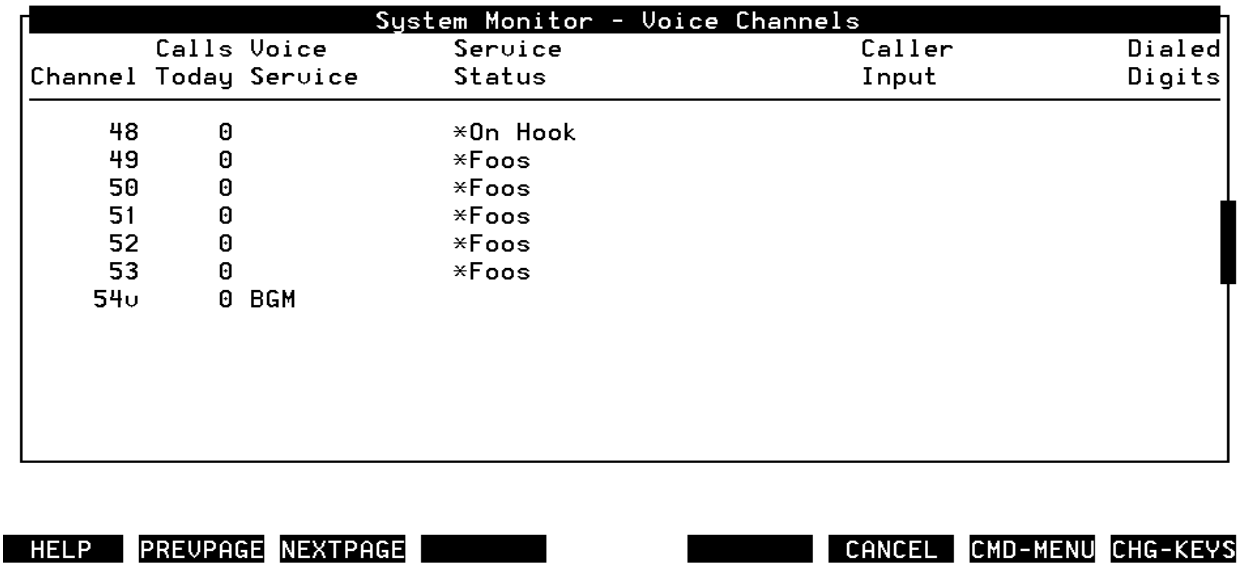
Figure 11. Function Key Labels — System Monitor Window



Standard Function Key Labels Standard function key labels remain constant regardless of the active menu or window. They represent commands that are valid for every menu or

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Table 2. Standard Function Key Labels

Key	Description
F1 Help	Opens an online help window. See Online Help on page 17 for more information about online help.
F6 Cancel	Closes the active screen and cancels any additions, deletions, or changes made. The screen that immediately precedes the just-closed screen becomes the active screen. If there is an activity in progress, such as making a backup copy of an application on a floppy disk, pressing **F6** (CANCEL) does not interrupt the operation.
F7 Cmd-Menu	Opens the Command Menu. Options include System Monitor, Trace Service, and Exit. See Command Menu on page 297 in Chapter 7, Common Administration, for more information.

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Table 3. Optional Function Key Labels

Function Key Label	Description
F2 (Choices)	Opens a menu screen containing choices for the current field, if there is a finite set of choices for a particular field. Move the cursor to the field you want to fill and press **F2** (CHOICES). The CHOICES menu opens, displaying the options available for that field.
F2 (Prevpage)	Scrolls back one full page, towards the beginning of text that is too long to fit within the active screen or window.
F3 (Nextpage)	Scrolls forward, toward the end of text that is too long to fit within the active screen, menu, or window. For example, pressing **F3** in Figure 11 on page 12 orders the system to move to the next page, while

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Table 3. Optional Function Key Labels

Function Key Label	Description
F5 (Bottom)	Scrolls toward the bottom of a page.
F6 (Print)	Prints the information provided by the active screen, such as a report.
F7 (Frm-Mgmt)	Opens the Frame Management Menu. See Command Menu on page 297 in Chapter 7, Common Administration , for more information. Options include list, move, refresh, and UNIX system.
F8 Chg-Keys	Switches the function key labels displayed from standard to optional, or vice versa. For example, Figure 11 on page 12 and Figure 12 on page 16 show the System Monitor window. Figure 12 on

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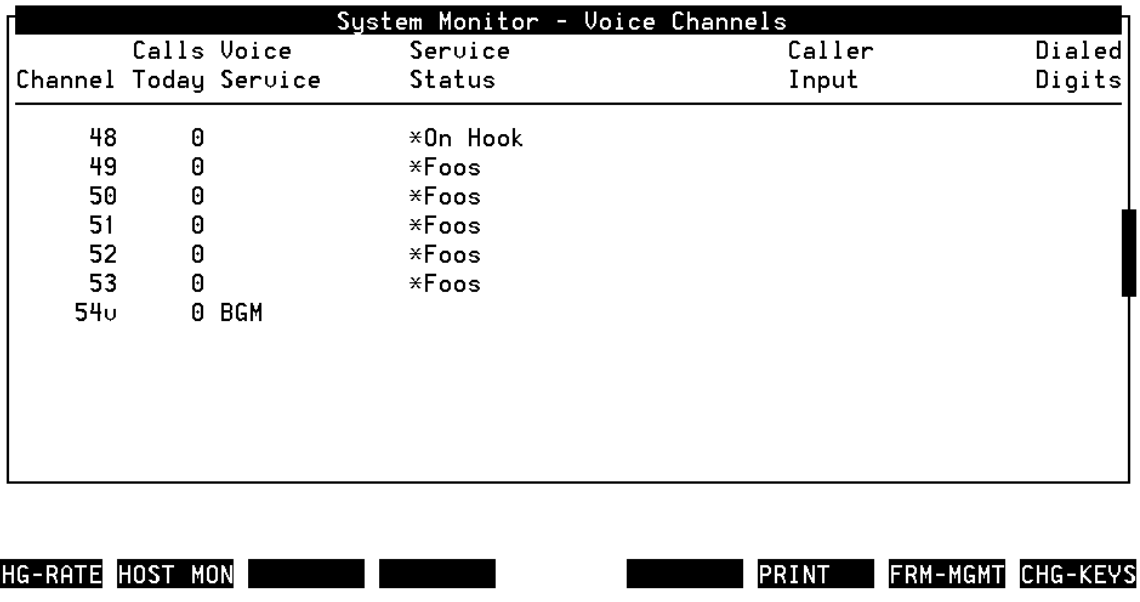
Figure 12. Change Keys — System Monitor Screen



Note: In Figure 12, the **Host Mon** function key selection does not appear if host software is not installed.

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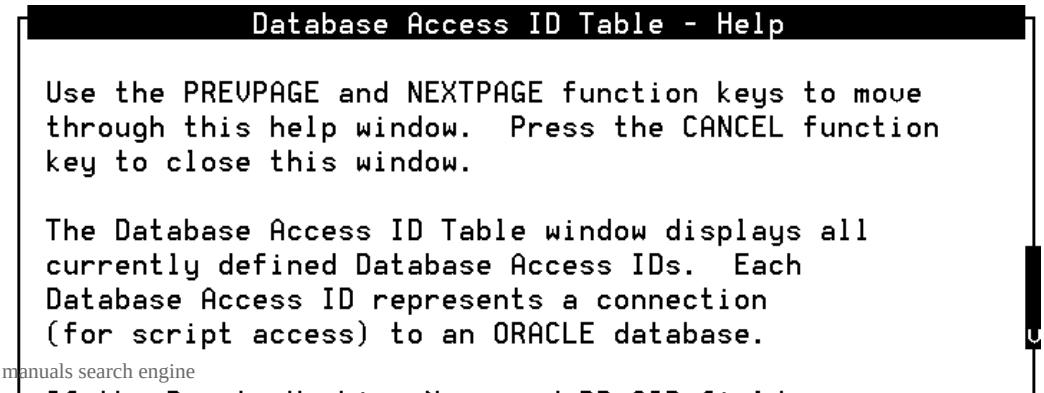
Online Help

Most screens and windows have a companion text window that contains helpful reference information. Figure 13 shows the help screen associated with the Database Access ID Table window. The system online help windows are not designed to be a substitute for this book. They briefly describe each of your options for a given menu or window. Press **F1** to access online help.

Figure 13. Sample Online Help Screen, Database Access ID Table


Database Access ID Table - Help
Use the PREVPAGE and NEXTPAGE function keys to move through this help window. Press the CANCEL function key to close this window.
The Database Access ID Table window displays all currently defined Database Access IDs. Each Database Access ID represents a connection (for script access) to an ORACLE database.

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Accessing the Administration Menus

To access the administration menu:

1. At the `Console Login:` prompt, enter **root**

   The system prompts you for a password.

2. Enter your root password.

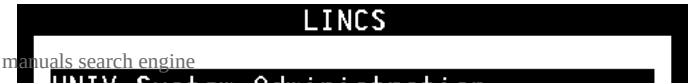
   The system displays the system prompt #.

3. Enter one of the following commands at the prompt:

   - To display the administration menu, enter **cvis_mainmenu**

     The system displays the administration menu (Figure 14).

Figure 14. Administration Menu



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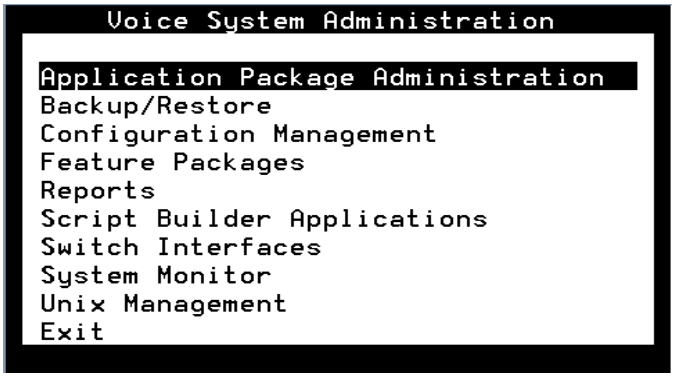
CAUTION:

Do not create multiple simultaneous **cvis_menu** processes. This could severely impact performance and may lock up the system.

The system displays the Voice System Administration menu (Figure 15).

Figure 15. Voice System Administration Menu



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See Chapter 2, Voice System Administration, for more information and

Administration Menu Options

From the administration menu, you can initiate UNIX System Administration and Voice System Administration, or you may exit.

UNIX System Administration

From the UNIX System Administration menu, you can set up a variety of generic software operations including backups, printer operations, and peripheral setup. See Chapter 2, UNIX Administration, for more information and procedures on UNIX administration.

Voice System Administration

From the Voice System Administration menu, you can begin your session for administering the system, such as application packages or reports. See Chapter 3, Voice System Administration, for more information and procedures on voice system administration.

Exit

Exit takes you out of the administration menus and returns you to the UNIX system prompt.

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Press **F6** (Cancel) from almost any place in the Administration menu

Note: **F6** (Cancel) does not exit from the UNIX System Administration menus. See Exit UNIX System Administration Menu on page 57 in Chapter 2, UNIX Administration, for the procedure to exit from the UNIX System Administration menus.

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2 UNIX Administration

Overview

This chapter describes the UnixWare™ system administration user interface, the procedures to access the UnixWare administration menu, and the procedures to perform basic UnixWare-level administration.

The sections in this chapter are arranged in the same order as the administration services in the UnixWare administration main menu.

UnixWare Documentation

For additional information on UnixWare administration, see the UnixWare documentation. Start with the *System Administration Volume 1* for an

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UNIX System Administration Access

To access SYSADM (the OA&M menu interface of UnixWare):

1. At the `Console Login:` prompt, enter **root**

   The system prompts you for a password.

2. Enter your root password.

   The system displays the system prompt #.

3. Enter **cvis_mainmenu**

   The system displays the Administration menu (Figure 16).

Figure 16. Administration Menu

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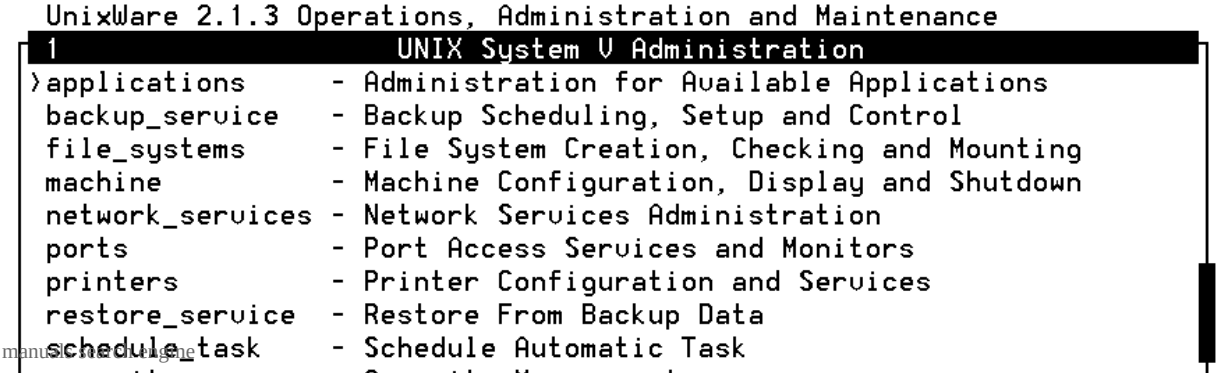
4 Select:

```
> UNIX System Administration
```

The system displays the UNIX System V Administration menu (Figure 17 on page 24).

Figure 17. UNIX System V Administration Menu


UnixWare 2.1.3 Operations, Administration and Maintenance
1 UNIX System V Administration
applications - Administration for Available Applications
backup_service - Backup Scheduling, Setup and Control
file_systems - File System Creation, Checking and Mounting
machine - Machine Configuration, Display and Shutdown
network_services - Network Services Administration
ports - Port Access Services and Monitors
printers - Printer Configuration and Services
restore_service - Restore From Backup Data
schedule_task - Schedule Automatic Task

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All of the procedures in this book assume that you are using the user interface menus. The procedures provide references to the books detailing command line interfaces when possible.

Application Administration

The Application Administration menu provides menus and tasks for administering custom applications. Application developers can use this option to place menus from which to administer add-on or custom applications.

Backup Scheduling, Setup and Control

The Backup Service menu provides two backup options: basic and extended. Back-up files can be stored on either tape or diskettes.

Note: Diskettes must be UNIX formatted when you begin this procedure. Tapes can be unformatted

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The basic backup services allow you to:

- Display the date and time of the last system and incremental backup.
- Conduct a backup of all files or only selected files in your HOME directory.
- Add, change, delete, or display backup requests.
- Back up all system and user files that have been modified or created since your voice system was installed.

The extended backup services allow you to:

- Determine the backup rotation period.
- Specify how backups are to be done for file systems and data partitions.
- Display the backup history and backup status logs.
- Establish lists of files that should not be backed up.
- Respond to system prompts during backup jobs.
- Schedule backups and the reminder messages that backups should be

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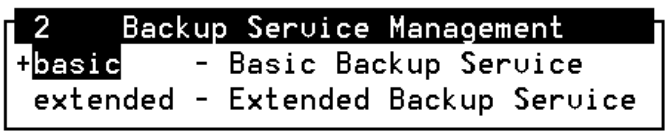
To access backup services:

1 Start at the UNIX System V Administration menu (Figure 17 on page 24) and select:

```
> backup_service
```

The system displays the Backup Service Management menu (Figure 18).

Figure 18. Backup Service Management Menu



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Basic Backup

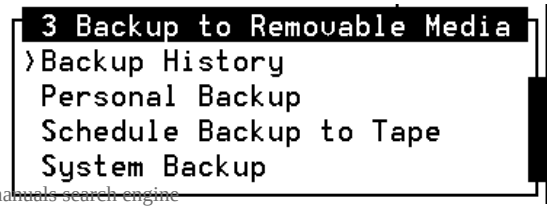
To perform a basic backup:

1 Start at the Backup Service Management menu (Figure 18 on page 27) and select:

```
> basic
```

The system displays the Backup to Removable Media menu (Figure 19).

Figure 19. Backup to Removable Media Menu



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Backup History

The Backup History menu option displays the date and time of the last system and incremental backup.

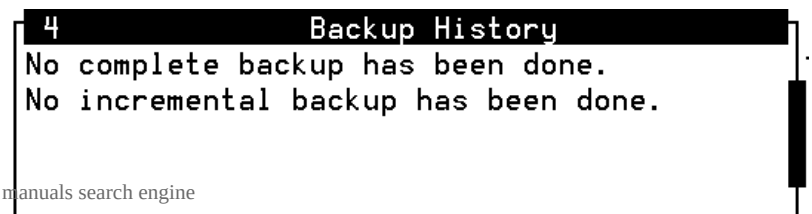
To view the backup history:

1 Start at the Backup to Removable Media menu (Figure 19 on page 28) and select:

```
> Backup History
```

The system displays the Backup History window (Figure 20).

Figure 20. Backup History Window



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Backup of All Personal Files

A personal backup copies all the files in your HOME (or personal) directory to either tape or formatted diskettes.

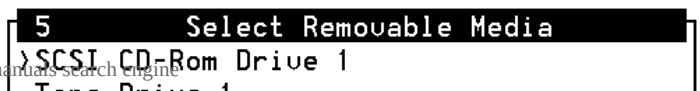
To back up *all* files in your personal directory:

1. Start at the Backup to Removable Media menu (Figure 19 on page 28) and select:

```
> Personal Backup
    > Backup Files under /
```

The system displays the Select Removable Media menu (Figure 21).

Figure 21. Select Removable Media Menu



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2 Select the removable media type.

The system displays a message showing the approximate number of diskettes or tapes, and the time required to backup the HOME directory.

The system prompts you to insert the first diskette or tape. The system periodically prompts you to insert more diskettes or tapes until the backup is complete.

3 Press **ENTER** when the backup is complete.

The system redisplays the Backup to Removable Media menu (Figure 19 on page 28).

Backup of Selected Personal Files

This procedure backs up selected files and directories in your HOME directory to either tape or formatted diskette.

To back up selected personal files or directories:

1 Start at the Backup to Removable Media menu (Figure 19 on page 28) and select:

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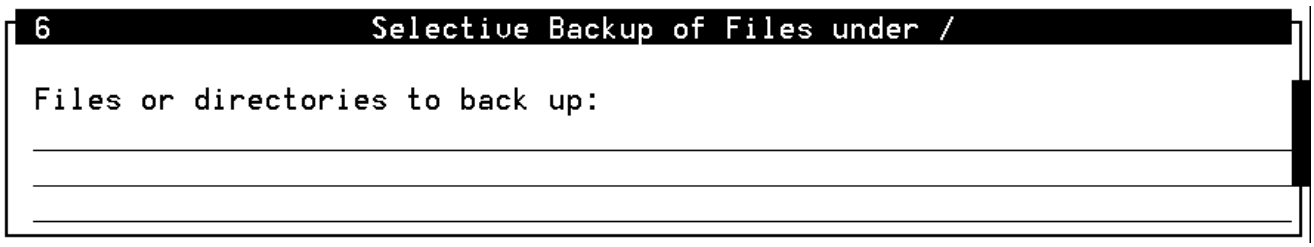
The system displays the Select Removable Media menu (Figure 21 on page 30).

2 Select the removable media type.

The system displays the Selective Backup of Files under / window (Figure 22).

Figure 22. Selective Backup of Files under / Window



3 Enter the file names and directory names to be backed up. Separate each entry with a space in the `Files or directories to back up:` field.

Note: All files and directories must be in the HOME directory or in a subdirectory of HOME.

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The system prompts you to insert the first diskette or tape. The system periodically prompts you to insert more diskettes or tapes if they are needed until the backup is complete.

5 Press **ENTER** when the backup is complete.

The system redisplays the Backup to Removable Media menu (Figure 19 on page 28).

Schedule a Backup to Tape

The Schedule Backup to Tape menu option allows you to:

- Add a system or incremental backup.
- Change a previously scheduled backup request.
- Delete a previously scheduled backup request.
- Display the scheduled backup list.

Note: You need either root or system administration privileges to add, change, or delete a scheduled backup. You do not need those privileges to display a list of scheduled backups.

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Add a Backup

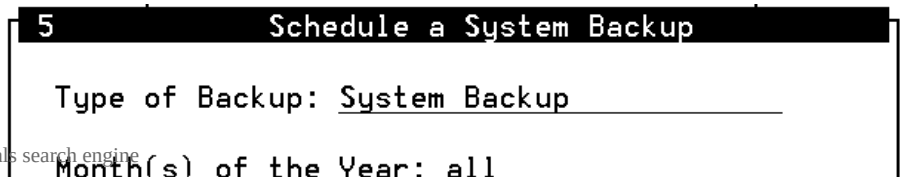
To schedule a new backup to tape:

1 Start at the Backup to Removable Media Menu (Figure 19 on page 28) and select:

```
> Schedule Backup to Tape
    > Add
```

The system displays the Schedule a System Backup window (Figure 23).

Figure 23. Schedule a System Backup Window



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2 Press **F2** (Choices) to toggle between System Backup and Incremental System Backup in the `Type of Backup:` field. A system backup (field default) performs a back up of all system and user files installed or modified since the voice system was first installed. An incremental backup performs a back up of all system and user files since the last backup.

3 Use one of the following methods to enter a value in the `Month(s) of the Year:` field:

- Type a number from 1 to 12 where January is 1 and December is 12 to indicate a single month.
- Type two numbers separated by a hyphen to indicate a range of months. For example, type **1-8** to instruct the system to perform backups of January through August.
- Press **F2** (Choices) and press **F2** (Mark) to select one or more months. Press **F3** (Enter) to save the selected month or months and return to the `Month(s) of the Year:` field.

The default value is “all,” to back up all months.

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- ~ Type two numbers separated by a hyphen to indicate a range of days. For example, type **14-20** to instruct the system to perform a backup every day from day 14 through day 20 of the month.
- ~ Press **F2** (Choices) and press **F2** (Mark) to select one or more days. Press **F3** (Enter) to save the selected day or days and return to the `Day(s) of the Month:` field.

The default is “all,” to back up all days of the month.

5 Use one of the following methods to enter a value in the `Day(s) of the Week:` field:

- ~ Type the first letter of the day to indicate a single day of the week, or Press **F2** (Choices) to select a single day from a menu.

Note: Sunday is *Su* and Thursday is *Th*. Every other day of the week is indicated by its first letter.

- ~ Type two days, separated by a hyphen to indicate a range of days. For example, type **M-Th** to instruct the system to perform a backup every Monday, Tuesday, Wednesday, and Thursday.

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6 Set the `Time of Day:` field:

a Type a number in the Hours portion of the field to indicate the hour, where 00 is midnight and 23 is 11:00 p.m. Or, press **F2** (Choices) to select from a menu.

b Press ▼.

The system places the cursor in the minutes portion of the field**.**

c Type a number from 0 to 59 to indicate the minutes past the hour.

The default time is 02:00, to start the backup at 2:00 a.m.

7 Press **F3** (Save).

The system displays a confirmation window that asks whether you want to continue to schedule the backup.

8 Do one of the following:

~ To confirm the backup schedule, press **F3** (Cont).

The system returns to the Schedule Backup to Tape menu.

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Change Scheduled Backup Settings

To change scheduled backup settings:

1 Start at the Backup to Removable Media menu (Figure 19 on page 28) and select:

```
> Schedule Backup to Tape
    > Change
```

The system displays the Change Scheduled Backup window (Figure 24).

Figure 24. Change Scheduled Backup Window

```
5                        Change Scheduled Backup
+I  Month:5          Date:2-22                Day:M-F      00:00
 I  Month:all        Date:1                   Day:F        19:00
 I  Month:all        Date:all                 Day:all      19:00
```

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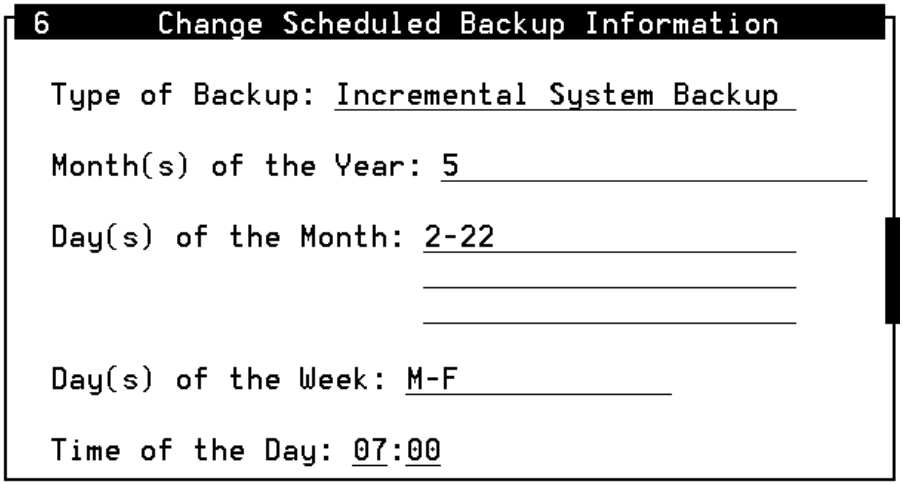
Figure 25. Change Scheduled Backup Information Window


6 Change Scheduled Backup Information
Type of Backup: Incremental System Backup
Month(s) of the Year: 5
Day(s) of the Month: 2-22
Day(s) of the Week: M-F
Time of the Day: 07:00

4 Change the information as appropriate. See step 2 through step 6 in Add a Backup on page 34 for information on how to add data to the fields in this window.

5 Press **F3** (Save).

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6 Do one of the following:

- To confirm the backup schedule, press **F3** (Cont).

  The system returns to the Schedule Backup to Tape menu.

- To cancel the backup schedule, press **F6** (Cancel).

  The system returns to the Schedule Backup to Tape menu.

Delete a Scheduled Backup

To delete scheduled backups:

1 Start at the Backup to Removable Media menu (Figure 19 on page 28) and select:

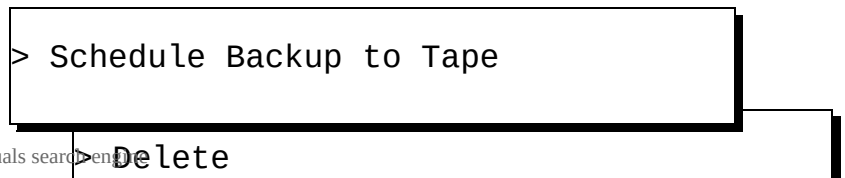

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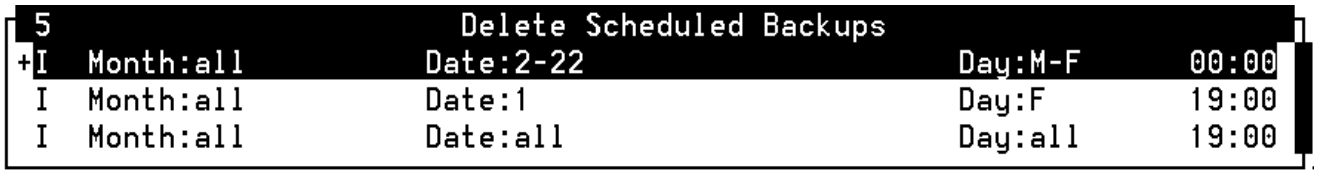
Figure 26. Delete Scheduled Backups Window



2. Select the scheduled backup to be deleted and press **F2** (Mark). Select as many of the entries as necessary.
3. Press **F3** (Enter).

   The system displays a confirmation window to confirm the backups marked for deletion.
4. Do one of the following:
   - To confirm the backup deletion, press **F3** (Cont).

     The system returns to the Schedule Backup to Tape menu.
   - To cancel the backup deletion, press **F6** (Cancel).

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Display Scheduled Backups

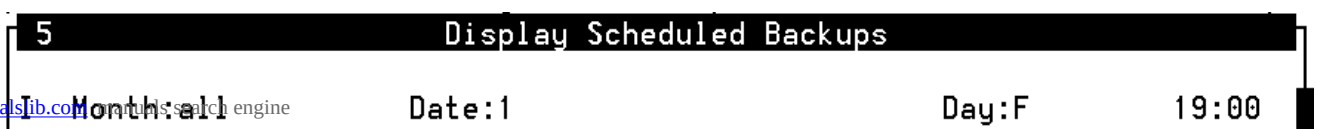
To display a list of scheduled backups:

1 Start at the Backup to Removable Media menu (Figure 19 on page 28) and select:

```
> Schedule Backup to Tape
    > Display
```

The system displays the Display Scheduled Backup window (Figure 27).

Figure 27. Display Scheduled Backups Window



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Performing Extended Backup Services

See “Backing Up the UCS 1000 R4.2 System” in Chapter 3, “Common System Procedures," in *UCS 1000 R4.2 System Reference*, 585-313-210, for information on when and how to conduct extended backups.

File System Creation, Checking, and Mounting

File Systems administration allows you to:

- Check for and repair errors on a file system.
- Set file system defaults.
- Monitor disk usage for all file systems.
- Display a list of installed file system types.
- List files by age or size.
- Identify the file system type

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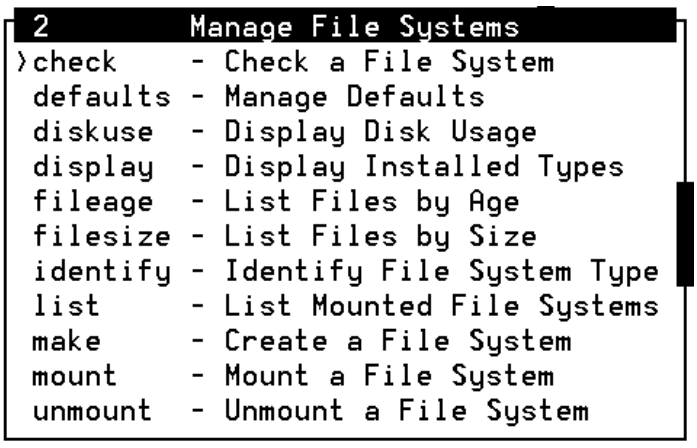
Figure 28 shows the options available for file system administration. See *System Files and Devices Reference* in the Novell UnixWare documentation set for additional information about each of these options.

Figure 28. Manage File Systems Menu


2 Manage File Systems
›check - Check a File System
defaults - Manage Defaults
diskuse - Display Disk Usage
display - Display Installed Types
fileage - List Files by Age
filesize - List Files by Size
identify - Identify File System Type
list - List Mounted File Systems
make - Create a File System
mount - Mount a File System
unmount - Unmount a File System

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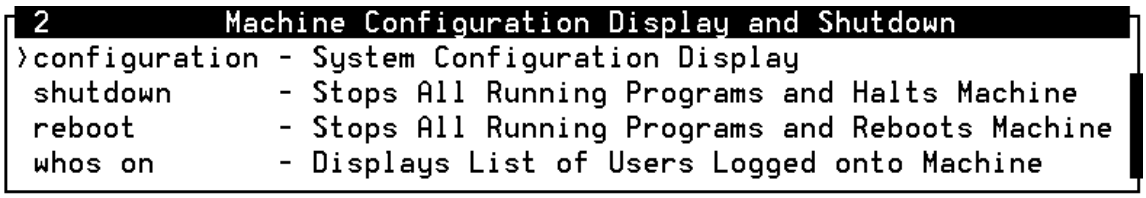
Machine Configuration, Display, and Shutdown

- Reboot the machine.
- Display a list of users who are logged on.

Figure 29 shows the options available for machine administration. See *System Files and Devices Reference* in the Novell UnixWare documentation set for additional information about each of these options.

Figure 29. Machine Configuration Display and Shutdown Menu


2 Machine Configuration Display and Shutdown
)configuration - System Configuration Display
shutdown - Stops All Running Programs and Halts Machine
reboot - Stops All Running Programs and Reboots Machine
whos on - Displays List of Users Logged onto Machine

Memory Size Disparity

The system may show that available memory is different than the amount that is actually available. See “Setting Up the UnixWare Environment," in Chapter

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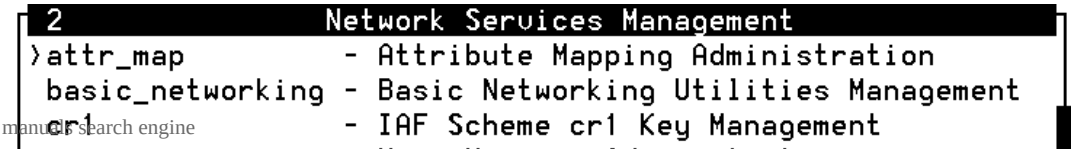
Network Services Administration

Network Services administration allows you to:

- Make network selections.
- Manage distributed file systems.
- Perform name-to-address translations.
- Manage basic networking.

Figure 30 displays the options available for network services administration. See *Network Administration* in the Novell UnixWare documentation set for additional information about each of these options.

Figure 30. Network Services Management Menu


2 Network Services Management
>attr_map - Attribute Mapping Administration
basic_networking - Basic Networking Utilities Management
cr1 - IAF Scheme cr1 Key Management

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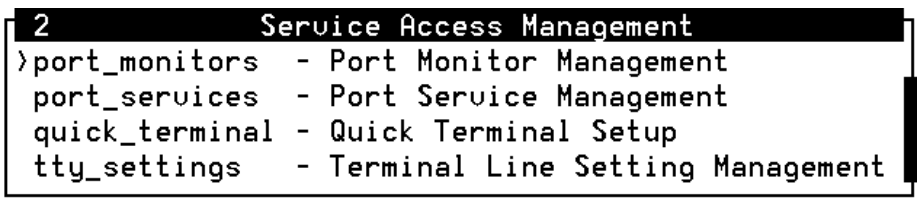
Port Access Services and Monitors

Ports administration allows you to monitor and service ports, set up quick terminal, and manage terminal line (tty) settings.

Figure 31 shows the options available for ports administration. See *System Administration Volume 1* in the Novell UnixWare documentation set for additional information about each of these options.

Figure 31. Service Access Management Menu


2 Service Access Management
>port_monitors - Port Monitor Management
port_services - Port Service Management
quick_terminal - Quick Terminal Setup
tty_settings - Terminal Line Setting Management

Printer Configuration and Services

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Restore from Backup Data

Restore service administration allows you to perform basic and extended restore services.

Note: If you want to back up and restore speech files, see the **spsav** command in Appendix A, Summary of Commands.

Figure 32 shows the options available for restore service administration.

Figure 32. Restore Service Management Menu

Basic Restore Services

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Basic restore services allow you to perform a personal restore or a system

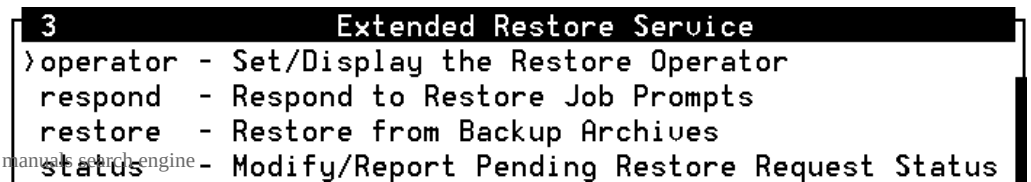
Extended Restore Services

Extended restore services allow you to:

- Specify the login of the operator who should be notified when a request that requires operation intervention is queued.
- Respond to restore requests.
- Restore files, directories, file systems, or a data partition from a backup archive.
- Display or modify the status of pending restore requests.

Figure 34 shows the options available for the Extended Restore Service.

Figure 34. Extended Restore Service Menu


3 Extended Restore Service
operator - Set/Display the Restore Operator
respond - Respond to Restore Job Prompts
restore - Restore from Backup Archives
status - Modify/Report Pending Restore Request Status

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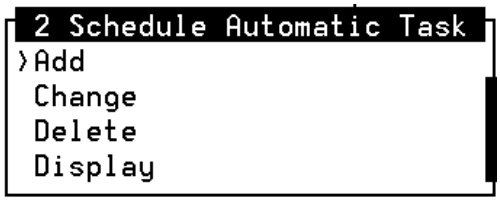
Schedule Automatic Task

Schedule task administration allows you to add, change, delete, and display a task scheduled through cron.

Figure 35 shows the options available for schedule task administration. See *System Administration Volume 1* in the Novell UnixWare documentation set for additional information about each of these options.

Figure 35. Schedule Automatic Task Menu



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Security Management

Security management allows you to manage the security features on the system. Currently, this includes only the audit trail facility management.

Figure 36 shows the options available for audit trail facility management. This menu includes the functions for:

- Managing audit criteria
- Enabling and disabling auditing
- Displaying audit information
- Displaying and setting event log parameters on the system

Note: To use the audit subsystem, you must be logged in at the SYS_PRIVATE security level, be a member of group audit, and be able to access the commands within the AUD role.

Figure 36. Audit Trail Facility Management Menu

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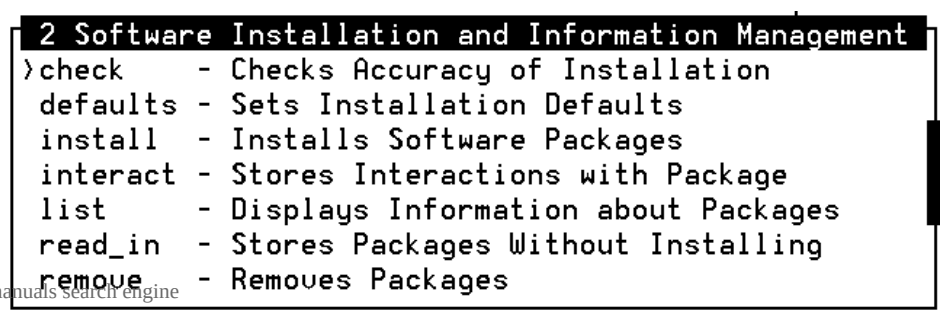
Software Installation and Removal

Software administration allows you to install software, display information about software packages, store software without installing it, and remove software.

Figure 37 shows the options available for software administration. See *System Files and Devices Reference* in the Novell UnixWare documentation set for additional information about each of these options.

Figure 37. Software Installation and Information Management Menu


2 Software Installation and Information Management
>check - Checks Accuracy of Installation
defaults - Sets Installation Defaults
install - Installs Software Packages
interact - Stores Interactions with Package
list - Displays Information about Packages
read_in - Stores Packages Without Installing
remove - Removes Packages

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Storage Device Operations and Definition

Storage devices administration allows you to:

- Copy information from one volume to another.
- Display storage device information.
- Erase the contents of a volume.
- Configure a storage device on the system.
- Reconfigure a storage device on the system.

A storage device may be integral disks, diskettes, SCSI data storage devices, nine-track tapes, and other devices configured on the system. The UCS 1000 R4.2 system uses integral disks (hard disks), diskettes, and tapes as storage devices.

Figure 38 shows the options available for storage administration. See *System Files and Devices Reference* in the Novell UnixWare documentation set for

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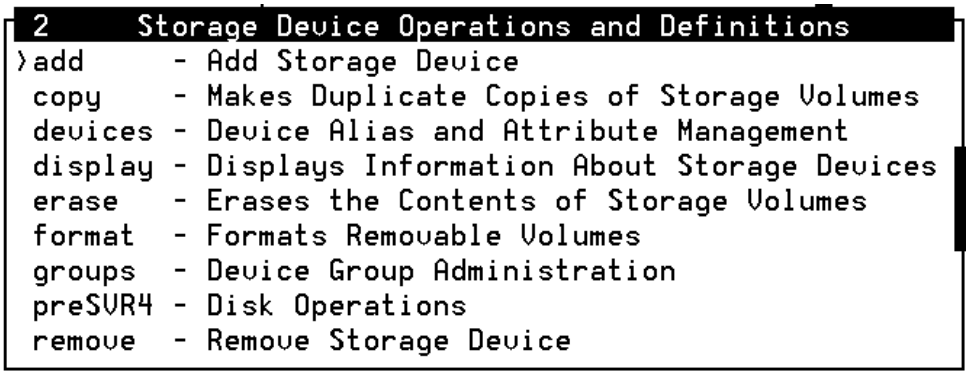
Figure 38. Storage Device Operations and Definitions Menu


2 Storage Device Operations and Definitions
add - Add Storage Device
copy - Makes Duplicate Copies of Storage Volumes
devices - Device Alias and Attribute Management
display - Displays Information About Storage Devices
erase - Erases the Contents of Storage Volumes
format - Formats Removable Volumes
groups - Device Group Administration
preSVR4 - Disk Operations
remove - Remove Storage Device

System Name, Date and Time, and Initial Password Setup

System setup administration allows you to administer the following system characteristics:

- Environment (date, time, time zone)

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CAUTION:

Your system's machine name is used by the Feature Licensing software. Call your support center before changing the machine name to avoid losing any of your feature licenses.

Figure 39 shows the options available for system setup administration.

Figure 39. System Name, Date, Time and Initial Password Setup Menu

```
 2          System Name, Date Time and Initial Password Setup
>datetime          - System Date and Time Information
 file_maintenance - Maintain files in /etc/default
 nodename          - System Name and Network Node Name of the Machine
 password          - Assign Administrative Login Passwords
 setup             - Set up System Information for First Time
```

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User Login and Group Administration

Users administration allows you to manage logins and groups on your system, including:

- Adding users or groups
- Defining defaults for adding users
- Listing users or groups
- Modifying attributes of users or groups
- Redefining user password information
- Removing users or groups

Figure 40 shows the options available for users administration. See *System Owner Handbook* in the Novell UnixWare documentation set for additional information about each of these options.

Figure 40. User Login and Group Administration Menu

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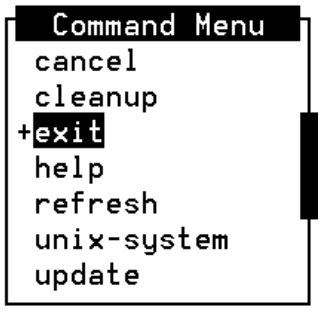
Exit UNIX System Administration Menu

To exit Unix System Administration:

1 Press **F7** (Cmd-Menu).

The system displays the Command Menu (Figure 41).

Figure 41. Command Menu



2 Select:

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3 Voice System Administration

Overview

The Voice System Administration menu provides access to many administrative options. This chapter describes how to access the Voice System Administration menu, and describes all of the administrative options. This chapter contains the reference and procedural information for the Configuration Management option.

Accessing the Voice System Administration Menu

To access the Voice System Administration menu:

1. At the `Console Login:` prompt, enter **root**

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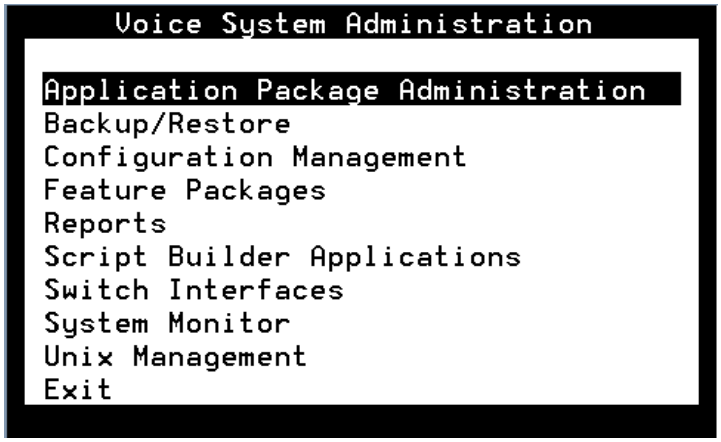
Figure 42. Voice System Administration Menu



Voice System Administration Menu Options

From the Voice System Administration menu, you have access to all of the major administrative features of the voice system.

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Backup/Restore

The Backup/Restore menu simplifies the backup and restore procedures by providing a user interface for differential and full backups.

See “Common System Procedures," in *UCS 1000 R4.2 System Reference*, 585-313-210, for more information on performing backup and restore procedures.

Configuration Management

The Configuration Management menu provides capabilities for you to perform the following administrative tasks:

- Add or remove database access IDs
- License features to the voice system
- Configure host sessions and manage host protocols
- Modify system messages
- Administer alarms
- Diagnose equipment
- Report system status

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Feature Packages

The Feature Packages menu provides administrative access to the optional feature packages currently installed.

Reports

The Reports menu allows you to generate and customize reports for:

- Call classification and data
- System messages
- System traffic

See Chapter 7, Common Administration , for more information on using the Reports menu.

Switch Interfaces

The Switch Interfaces menu provides access to administer digital switch parameters.

See Chapter 4, Switch Interface Administration , for more information on using the Switch Interfaces menu.

System Monitor

The System Monitor window displays the voice channels on the system and

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Unix Management

The Unix Management menu provides capabilities to format diskettes and tapes, administer printers and modems, install and remove software, and modify the system time and date.

See Chapter 6, Peripheral Administration , for more information on administering printers, modems, and terminals.

Configuration Management

To access the Configuration Management menu:

1. Start at the Voice System Administration menu (Figure 42 on page 59) and select:

```
> Configuration Management
```

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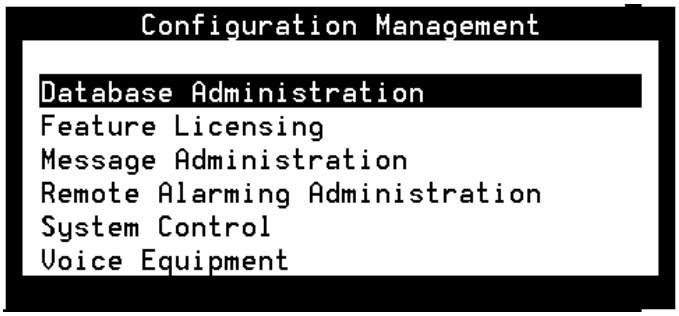
Figure 43. Configuration Management Menu



The Configuration Management menu contains the following options:

- Feature licensing (display Feature Licensing *only*)
- Message administration
- Remote alarming administration

Note: Remote alarming is not supported on UCS 1000 R4.2 systems.

- System control

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Feature Licensing

Feature Licensing allows customers to purchase features on a per–channel basis. Only Lucent services personnel can activate and change the feature licenses. Feature licenses cannot be modified by the administrator.

An administrator can display and print a report of the current feature licenses.

CAUTION:
Your system's machine name is used by the Feature Licensing software. Call your support center before changing the machine name and thus avoid losing any of your feature licenses.

To access the Feature Licensing window and display the current feature licenses:

1 Start at the Configuration Management menu (Figure 43 on page 63) and select:

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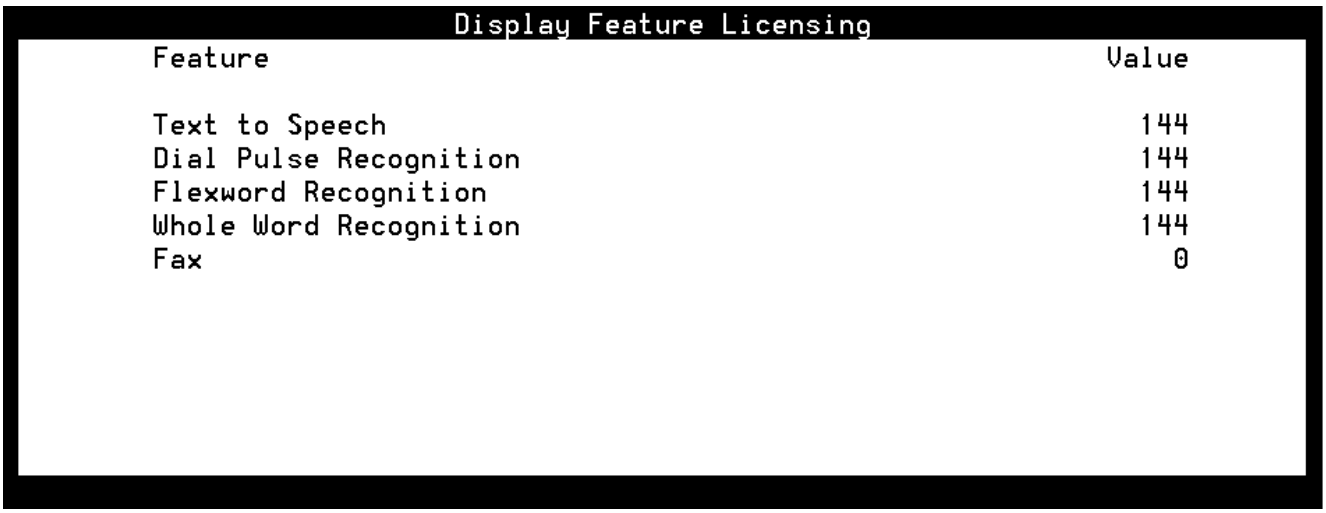
Note: Figure 44 is a sample window. Your Display Feature Licensing window may look different depending on the feature packages you purchased.

Figure 44. Display Feature Licensing Window



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Printing a Feature License Report

To print a report of the current system feature licenses:

1. Start at the Display Feature Licensing window (Figure 44 on page 65) and press **F8** (Actions).

   The system displays the Actions menu (Figure 45).

Figure 45. Actions Menu

2. Select:

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Message Administration

Messages are used to provide information about events and errors during system operations. System messages vary in content, priority, destination, and threshold parameters. Use the System Message Administration window to:

- List all the parameters associated with a particular system message.
- Add or remove a new destination to or from the current list of destinations for the current system message.
- Modify a message priority.
- Modify the system message threshold period.
- Add or remove a new threshold or threshold message ID pair to or from the current list of thresholds for the current system message.

Note: Some messages are generated with destinations and priorities that are not administrable through the System Message

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Accessing Message Administration

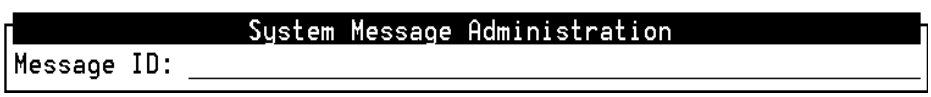
To access message administration:

1 Start at the Configuration Management menu (Figure 43 on page 63) and select:

```
> Message Administration
```

The system displays the System Message Administration window (Figure 46).

Figure 46. System Message Administration Window



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2 Enter the message ID of the message you want to administer in the

3 Press **F3** (Save).

The system displays the System Message Display window (Figure 47).

Figure 47. System Message Display Window

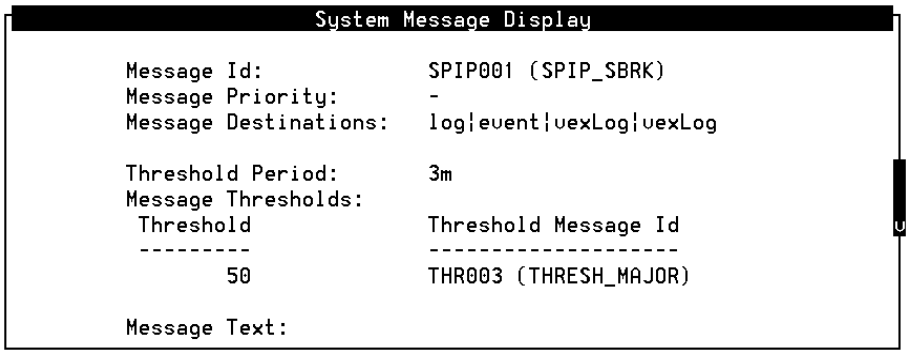

Table 4 on page 70 describes the fields in this window.

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Table 4. Field Descriptions for the System Message Display Window

Field	Description
`Message ID:`	Specifies a unique name for each message in the system.
`Message Priority:`	Specifies the urgency level of the message. The Message Priority may be NONE or – (for none), * (for minor), ** (for major), or *C (for critical).
`Message Destinations:`	Specifies a list of destinations where the message should be sent. By default, messages are sent to the message master log and either the alarm log (if the message is an alarm) or the event log (if the message is an event).
`Threshold Period:`	Specifies the length of time the message is included in the threshold count, provided that one or more thresholds are defined for this message.

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Table 4. Field Descriptions for the System Message Display Window

Field	Description
`Threshold:`	Specifies the number of messages to be generated within the threshold period necessary to trigger the threshold action.
`Threshold Message ID:`	Specifies the ID of the message to be generated when a threshold is reached. The priority and the destinations for the threshold message should be meaningful as a thresholding action. For example, message ID VROP003 may have a priority of minor (*), while its corresponding threshold message ID could be THR003 which has a major (**) priority. Generating the THR003 message after enough VROP003 messages have been generated within the Threshold Period is the threshold action. THR001, THR002, THR003, and THR004 have priorities of none (–), minor (*), major (**), and

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Adding Message Destinations

The system's message log provides a complete account of all messages generated by the voice system. All system messages are assigned to the appropriate destination during installation.

Note: If a message is changed from the event destination to the alarm destination, a similar change should be made on the message priority from none (–) to minor (*) and vice versa.

To add a destination to a message:

1. Start at the System Message Display window (Figure 47 on page 69) for a given message, and press **F8** (Chg-Keys).

   The system displays the alternate set of function keys.

2. Press **F1** (Add–Dest).

   The system displays the Add Message Destination window (Figure 48).

Figure 48. Add Message Destination Window

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3 Enter the destination for the message you want to add in the `Message Destination:` field or press **F2** (Choices) to select from a menu.

Valid message destinations are:

- stderr — The standard error of the process generating the message. Since most system processes redirect standard error to the system console, specifying this destination may result in the message being sent to the system console.
- console — The system console or **/dev/console**.
- alertPipe — A specially named pipe for messages that must be sent directly to the alerter. The alerter pipe is used for some special system processes. Specification of the alerter pipe for other system messages has little or no effect on the system message facility or on the alerter itself. The system is distributed with some messages specified with the alerter pipe as a destination. This destination should not be removed from the message.

Note: Separating alarm destinations from event destinations ensures

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- ~ event — Specifies that the delivery system send all event level messages (priority "–") to the event log. The event log may be accessed via the **display messages** command or the Message Log Report window.

4 Press **F3** (Save).

The system redisplays the System Message Display window (Figure 47 on page 69) showing the new message destination.

5 Complete the Saving Changes and Exiting Message Administration on page 83 procedure.

The system installs the changes on the voice system.

Removing Message Destinations

This procedure allows you to remove a destination from the current list of destinations for the current system message.

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The system displays the Remove Message Destination window (Figure 49).

Figure 49. Remove Message Destination Window

3 Enter the Message Destination that you want to remove in the `Message Destination:` field, or press **F2** (Choices) to select from a menu.

Note: The destination on **log** is not a valid choice since this destination cannot be removed using the Remove Message Destination window.

4 Press **F3** (Save).

The system redisplays the System Message Display window (Figure 47 on page 69) showing the removed message destination.

5 Complete the Saving Changes and Exiting Message Administration on

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Adding Thresholds

Message thresholds are triggering devices that alert operations personnel to take action when a certain number of messages are generated over a certain period of time. Message thresholding allows for escalation of message priority or criticality. A system message may be of little concern when it occurs in small numbers over long time intervals. However, an increase of message occurrences over shorter time intervals may indicate more serious problems with the system. Message thresholding sends a new message to be sent when a threshold is reached. The new message may be higher in priority and have a different destination set than the original message.

This procedure adds a new threshold and thresholding message ID pair to the current list of thresholds for the current system message.

To add a message threshold:

1. Start at the System Message Display window (Figure 47 on page 69) for a given message, and press **F8** (Chg-Keys).

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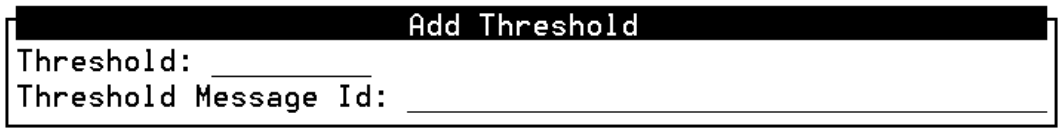
2 Press **F3** (Add–Thsh).

The system displays the Add Threshold window (Figure 50).

Figure 50. Add Threshold Window



3 Enter a nonnegative integer threshold value or **none** in the `Threshold:` field.

4 Enter **THR001** (for none), **THR002** (for minor), **THR003** (for major), or **THR004** (for critical) in the `Threshold Message Id:` field, or press **F2** (Choices) to select from a menu.

5 Press **F3** (Save).

The system redisplays the System Message Display window (Figure 47 on page 69) showing the new message threshold.

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Removing Thresholds

This procedure allows you to remove a threshold or a threshold message ID pair from the list of thresholds for the current system message.

To remove a message threshold:

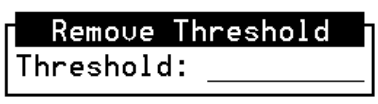
1. Start at the System Message Display window (Figure 47 on page 69) for a given message, and press **F8** (Chg-Keys).

   The system displays the alternate set of function keys.

2. Press **F4** (Rem-Thsh).

   The system displays the Remove Threshold window (Figure 51).

Figure 51. Remove Threshold Window



3. Enter a nonnegative integer message threshold value in the `Threshold:`

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5 Complete the Saving Changes and Exiting Message Administration on page 83 procedure.

The system installs the changes on the voice system.

Modifying Message Priorities

This procedure allows you to modify message priority. When the system is installed, each message is assigned a particular priority. In most cases, these priorities are appropriate and do not need to be modified. Depending on the type of application, however, you may want to modify a message priority.

Events are messages of priority none (denoted by "–" in the System Message Administration window). Alarms are messages of priority minor, major, and critical (denoted by "*", "**", and *C, respectively) in the System Message Administration window.

Note: If you modify the message priority of some system messages, it

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To modify a message priority:

1. Start at the System Message Display window (Figure 47 on page 69) for a given message, and press **F8** (Chg-Keys).

   The system displays the alternate set of function keys.

2. Press **F5** (Msg–Prio).

   The system displays the System Message Priority window (Figure 52).

Figure 52. System Message Priority Window

3. Enter a priority in the `Message Priority:` field or press **F2** (Choices) to select from a menu.

4. Press **F3** (Save).

   The system redisplays the System Message Display window (Figure 47

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Modifying Threshold Periods

This procedure allows you to modify the system message threshold period, or the interval of time over which messages are counted for a given threshold.

To modify a threshold period:

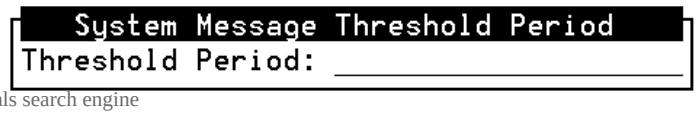
1. Start at the System Message Display window (Figure 47 on page 69) for a given message, and press **F8** (Chg-Keys).

   The system displays the alternate set of function keys.

2. Press **F6** (Thsh-Per).

   The system displays the System Message Threshold Period window (Figure 53).

Figure 53. System Message Threshold Period Window



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You must enter the threshold period as a time interval with the following syntax:

number[dimension] number[dimension]

where *number* is a positive integer and *dimension* is one of the following single characters:

- **w** for weeks
- **d** for days
- **h** for hours
- **m** for minutes
- **s** for seconds

Table 5 provides examples of threshold periods and the required syntax.

Table 5. Threshold Period Examples

Specification	Value or Description

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The system displays the System Message Display window (Figure 47 on page 69) showing the new threshold period.

5 Complete the Saving Changes and Exiting Message Administration on page 83 procedure.

The system installs the changes on the voice system.

Saving Changes and Exiting Message Administration

CAUTION:
You MUST perform this procedure if you want to save your message administration changes.

To save message administration changes and exit the Message Administration menu:

1 Start from any menu or window in the Message Administration menus and press **F6** (Cancel) until you return to the System Message

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System Control

Use the System Control menu to:

- Display the status of the UCS 1000 R4.2 system
- Start and stop the voice system
- Diagnose circuit cards, channels, and buses

To access the System Control menu:

1. Start at the Configuration Management menu (Figure 43 on page 63) and select:

```
> System Control
```

   The system displays the System Control menu (Figure 54).

Figure 54. System Control Menu

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Diagnose

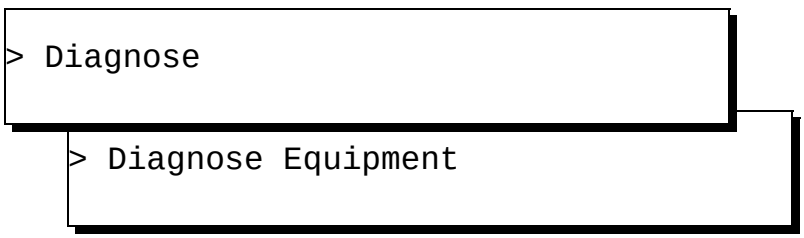
The Diagnose menu allows you to perform diagnostics on system equipment.

Diagnose Equipment

You can run diagnostics on E1/T1, LSPS, and SSP circuit cards. Run diagnostics whenever the system displays a message indicating circuit card failure.

To diagnose equipment:

1 Start at the System Control menu (Figure 54 on page 84) and select:



The system displays the Diagnose Equipment window (Figure 55).

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Table 6 describes the fields in this window.

Table 6. Field Descriptions for Diagnose Equipment Window

Field	Description
`Equipment to diagnose:`	Specifies whether the type of equipment to be diagnosed is a circuit card or a bus. Enter **card** or **bus**, or press **F2** (Choices) to select from a menu. There is no default value for this field. This is a required field.
`Equipment number:`	A number that identifies each E1/T1, LSPS, or SSP circuit card. Equipment numbers are defined by the position of the circuit card in the circuit card table shown on the Display Voice Equipment window (Figure 61 on page 96). Card range can be from 1 to 16. When you specify a range of circuit cards, cards are diagnosed in order, one at a time. This is a required field. The bus value must be **1**.
`Immediate diagnosis?:`	Specifies whether there should be immediate diagnosis on the selected circuit card. Type **y** for yes, **n** for no, or press **F2** (Choices) to select from a menu. If you choose yes, all calls on active channels for the specified

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2 Enter the information as described in Table 6 on page 86.

3 Press **F3** (Save).

The system displays a report showing the status of the specified equipment.

4 Press **F6** (Cancel) repeatedly until you return to the System Control menu.

For more information on diagnostics, see Chapter 2, "Diagnostics," of *UCS 1000 R4.2 System Reference*, 585-313-210.

Renumbering Voice Channels

The Renumber Voice Channels option removes all nonexistent (NONEX) circuit cards from the voice equipment table. It then reorders all existing equipment with E1/T1 circuit cards first, followed by SSP circuit cards. This reordering changes the channel numbers of some circuit cards. However, user-defined characteristics such as options, attributes, and script

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CAUTION:
Renumbering voice channels shuts the system down immediately and restarts it. When you select this option, a warning is displayed and you are given the option of continuing with the procedure or returning to the System Control menu.

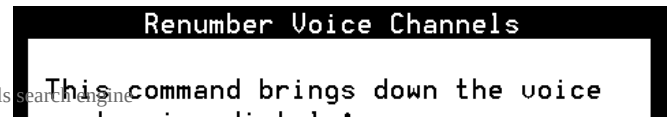
To renumber voice channels:

1 Start at the System Control menu (Figure 54 on page 84) and select:

```
> Renumber Voice Channels
```

The system displays the Renumber Voice Channels window (Figure 56).

Figure 56. Renumber Voice Channels Window



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Reporting Voice System Status

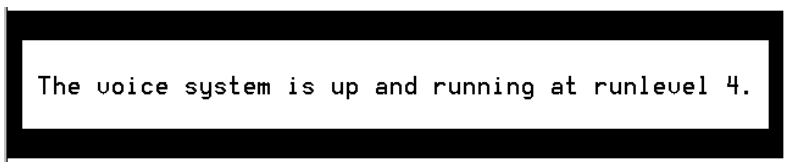
To see whether the voice system is running or stopped, and to view the current voice system run level.

1 Start at the System Control menu (Figure 54 on page 84) and select:

```
> Report Voice System Status
```

The system displays the Status of Voice System window (Figure 57).

Figure 57. Status of Voice System Window



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2 Press **F1** (Acknowledge Message)

Stopping the Voice System

This procedure stops the voice system by taking all system channels out of service with the option to wait for in-progress calls to end. Stopping the system is usually done when you are performing some type of routine service such as backup and restore. When the system is stopped, the CPU does the following:

- Places the entire system in the idle state when all lines are free
- Saves internal system tables
- Turns off voice system processes

Use the following procedure to stop the voice system:

1. Start at the System Control menu (Figure 54 on page 84) and select:

```
> Stop Voice System
```

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2 Enter a time interval between 60 and 600 seconds in the `Seconds:` field, or press **F2** (Choices). The default is 180.

Note: During this wait time, all calls in progress are completed, but no new calls are accepted.

3 Press **F3** (Save).

The system displays a message telling you it will stop the voice system if you press **ENTER**.

Note: To return to the System Control menu without stopping the system, press **F6** (Cancel)

4 Press **ENTER**.

The system displays messages telling you it is stopping the voice system.

Shutting Down the System

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To shut down the system:

1 Start at the System Control menu (Figure 54 on page 84) and select:

```
> Shut Down the Voice System
```

The system displays the Wait Time window (Figure 59).

Figure 59. Wait Time Window

2 Enter a time interval between 60 and 600 seconds in the `Seconds:` field or press **F2** (Choices).

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Starting the Voice System

This procedure allows you to start or restart the voice system. When this process is invoked, all channels that were deactivated when you stopped the voice system are returned to service in the maintenance state they had when the voice system was last running.

To start the voice system:

1. Start at the System Control menu (Figure 54 on page 84) and select:

```
> Start the Voice System
```

2. Press **ENTER**.

   The system displays messages telling you it is starting up the voice system.

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Voice Equipment

Voice equipment includes those circuit cards and their associated channels in the system that provide voice system functionality.

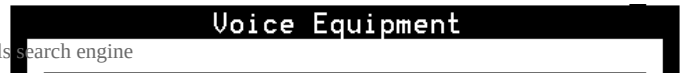
To access the Voice Equipment menu:

1 Start at the Configuration Management menu (Figure 43 on page 63) and select:

```
> Voice Equipment
```

The system displays the Voice Equipment menu (Figure 60).

Figure 60. Voice Equipment Menu



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Note: The LSPS Functions and SSP Functions menu items appear only if you have the ASP Driver and LSPSset packages, respectively, installed.

Use the Voice Equipment menu to:

- Assign, display, and unassign voice system equipment options and states
- Change channel maintenance states
- Assign, display, and unassign channel and telephone number services
- Assign, display, and unassign circuit card and channel functions
- Print a report of voice system circuit card and channel options

Display the Voice Equipment Window

To access the Display Voice Equipment window:

1. Start at the Voice Equipment menu (Figure 60 on page 94) and select:

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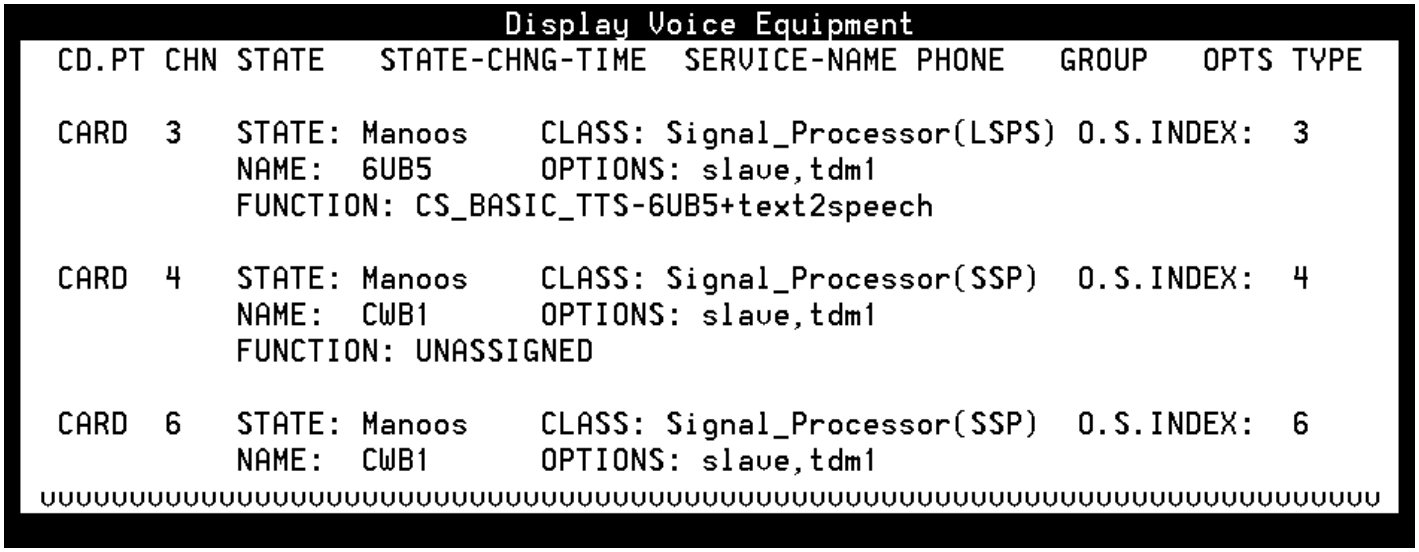
The system displays the Display Equipment window (Figure 61).

Figure 61. Display Voice Equipment Window


Display Voice Equipment
CD.PT CHN STATE STATE-CHNG-TIME SERVICE-NAME PHONE GROUP OPTS TYPE
CARD 3 STATE: Manoos CLASS: Signal_Processor(LSPS) O.S.INDEX: 3
NAME: 6UB5 OPTIONS: slave,tdm1
FUNCTION: CS_BASIC_TTS-6UB5+text2speech
CARD 4 STATE: Manoos CLASS: Signal_Processor(SSP) O.S.INDEX: 4
NAME: CWB1 OPTIONS: slave,tdm1
FUNCTION: UNASSIGNED
CARD 6 STATE: Manoos CLASS: Signal_Processor(SSP) O.S.INDEX: 6
NAME: CWB1 OPTIONS: slave,tdm1

This window, by default, displays all channels currently in the system, including:

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- Telephone number (PHONE)
- Group number (GROUP)
- Options (OPTS)
- Circuit card type (TYPE)

This window can be several pages long, depending on the display parameters for the window, and the equipment installed in the system.

Press **F2** (Prev Page) and **F3** (Next Page) to move up and down through the pages of this window.

Press **F4** (First Page) to view the first page of the window. Press **F5** (Last Page) to view the last page of the window.

Note: Cards in the NONEX state (that is, those that have been physically removed from the system, or have been "detached" using the **detach** command) do not show up in the Display Voice Equipment window.

Use the following procedure to modify the default display parameters for

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Modifying the Display Voice Equipment Window Parameters

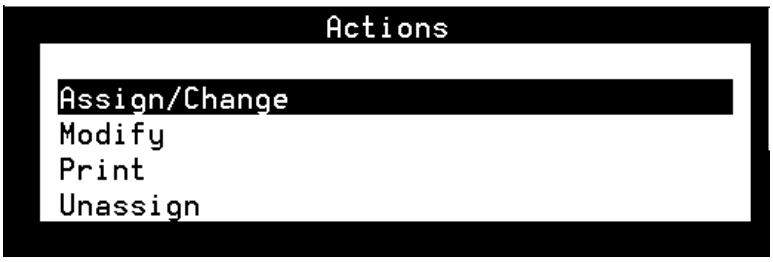
You can tailor the Display Voice Equipment window to show a full range of channels or a subrange. The parameters you specify are saved in a file and remain in effect until you change them.

To change the display parameters:

1 Start at the Display Voice Equipment window (Figure 61 on page 96) and press **F8** (Actions).

The system displays the Actions menu (Figure 62).

Figure 62. Actions Menu



2 Select:

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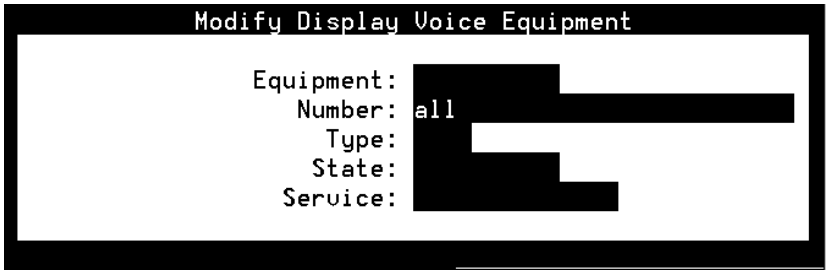
The system displays the Modify Display Voice Equipment window (Figure 63).

Figure 63. Modify Display Voice Equipment Window



3 Enter one of the following in the `Equipment:` field, or press **F2** (Choices) to select from a menu.

- **card** — This parameter displays the version of software running on each circuit card (in the `FUNCTION:` field), circuit card options, and the circuit card O.S. Index (slot number) for each of the voice system circuit cards installed.

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- E1/T1: The circuit card parameter also shows all channel information (with the first two columns in the order CHAN, then CD.PT), since these types of circuit cards also have associated channels.

~ **channel** (default) — Information displayed with the channel and card parameters is almost identical. However, the card parameter also displays the version of software that is running on each circuit card (in the FUNCTION: field), circuit card options, and the circuit card O.S. Index (slot number).

~ **group** — In the standard display, with the GROUP column last, only the first seven characters in that field are displayed. For example, a channel may be assigned to groups “1,2,3,4,5,6,7,8,9,10”, but the GROUP column only displays “1,2,3,4”.

4 (Optional) Enter a single number, or a range of numbers separated by commas or spaces, or **all** (default) in the Number: field to specify a certain equipment number or number range to be displayed.

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5 (Optional) In the Type: field, enter **SSP-LSPS** or **E1/T1** to specify an

6 (Optional) In the `State:` field, enter a maintenance state, or press **F2** (Choices) to select from a menu. This field limits the voice equipment display to circuit cards or channels in a particular state. If you leave this field blank, all maintenance states are displayed. See Equipment State on page 103 for a list and description of each maintenance state.

7 (Optional) In the `Service:` field, enter a service name, or press **F2** (Choices) to select from a menu. This field is used to limit the voice equipment display to channels that are associated with a particular service or function. This field is valid only if the `Equipment:` field is **channel**. If you leave this field blank, the system does not restrict the display to any one service.

A special service name of “*DNIS_SVC” is available. If you enter ***DNIS_SVC**, the voice equipment display shows the number service based on the calling party’s number.

8 Press **F3** (Save).

The system saves the display settings to a file and returns to the Display

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Note: All the digital (E1/T1) circuit cards should be set to **tdm**. It is the only valid setting.

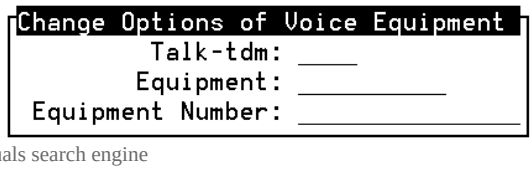
To change voice equipment options for digital circuit cards:

1 Start at the Voice Equipment menu (Figure 60 on page 94) and select:

```
> Equipment Options
```

The system displays the Change Options of Voice Equipment window (Figure 64).

Figure 64. Change Options of Voice Equipment Window



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Note that background speech plays at a lower volume than foreground speech.

3 Enter **circuit card** or **channel** in the `Equipment:` field, or press **F2** (Choices) to select from a menu. If you specify a circuit card, the option is set for all channels of that circuit card.

4 Enter a single number or range of numbers to select the voice circuit cards or channels to change in the `Equipment Number:` field, or enter **all** (default).

5 Press **F3** (Save).

The system saves the voice equipment options.

Equipment State

The equipment states, listed below, indicate to the voice system whether or not a voice circuit card/channel is ready and able to receive calls, process speech, and so on.

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and cannot be used for channels. The following is a description of the different maintenance states for voice equipment:

- MANOOS (manual out-of-service) — Indicates that the circuit card or channel has been taken out of service with a command that was issued manually.

Note: Change SSP and/or LSPS circuit cards to the MANOOS state only when there are no active calls on the system. The MANOOS state disrupts voice playback on all speech processing circuit card channels (if only one speech processing circuit card is installed) or negatively affects voice playback performance on all channels (if more than one speech processing circuit card is installed).

- INSERV (in service) — Indicates that the circuit card or channel is in service and able to carry a transaction.
- FOOS (facility out-of-service) — Indicates that the circuit card or channel was been taken out of service by the voice system because the link to the switch is out of service (not physically connected, switch down, and so on)

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- HWOOS (hardware out-of-service) — Indicates the circuit card or channel is out of service due to one or more of its dependencies being out of service, broken, or not physically connected.
- NETOOS (network out-of-service) — For digital circuit cards or channels only: Indicates that the system is ready for the channel to go inserv, but is waiting for the network switch to also be ready for the channel to go inserv. Note that channels can freeze in this state if the switch is not ready for the channel to go inserv.

As indicated in the list, some maintenance states are reserved for the voice system only. A system administrator cannot place the equipment in these states. However, a system administrator can place the equipment into the MANOOS state, and then into the inserv state. See Table 7 on page 106 for a description of the valid administrator changes.

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Table 7. Valid Equipment State Changes

If a Card/Channel is . . .	You May Change It to . . .	For Equipment Type . . .
MANOOS	INSERV	circuit cards or channels.
INSERV	MANOOS	circuit cards or channels.
FOOS	MANOOS	circuit cards or channels.
NETOOS	MANOOS	digital circuit cards or channels.
HWOOS	MANOOS	circuit cards or channels.
BROKEN	MANOOS	circuit cards or channels.

To change the maintenance state of a circuit card or channel:

1 Start at the Voice Equipment menu (Figure 60 on page 94) and select:

```
> Equipment State
```

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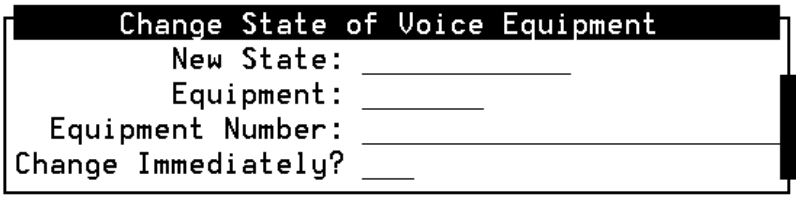
The system displays the Change State of Voice Equipment window (Figure 65).

Figure 65. Change State of Voice Equipment Window



2 Enter the state to which the designated equipment should be changed in the `New State:` field or press **F2** (Choices) to select from a menu. Valid choices are **inserv** (in service) and **manoos** (manual out–of–service).

3 Enter **channel** or **card** for the type of equipment in the `Equipment:` field, or press **F2** (Choices) to select from a menu.

4 Enter the equipment number or numbers for which you want to change the state in the `Equipment Number:` field. Type a single number, a range of numbers separated by commas or spaces, or **all** (default).

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6 Press **F3** (Save).

The system changes the maintenance state of the selected voice equipment.

Suggestions for Changing the Maintenance State of Channels

Use the following information to help you determine why a channel may be placed in a given maintenance state.

Manoos E1/T1 Channels Using E&M Protocol

The following suggestions apply only to individual MANOOS E1/T1 channels using the E&M protocol. Other E1/T1 protocols provide the ability to remove individual channels from service.

At times, you may want to limit the number of calls the system handles by removing some of the E1/T1 channels from service. Note that removing E1/T1 channels, however, may negatively impact the system if the switch uses an inappropriate hunting pattern.

The E&M protocol does not allow you to remove individual channels from

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again at the beginning. Consequently, the caller could receive a busy signal even though there might be other idle channels that are in service.

Ideally, the switch should use all inserv channels before attempting to use any MANOOS channels. You can force the switch to use inserv channels before using MANOOS channels by requesting a switch hunting pattern that always scans for idle channels starting at the beginning of the hunt group. On a 4ESS switch, for example, this is achieved by requesting a “trunk hunt without memory.” You can then limit the number of simultaneous incoming calls by placing the least-used channels (channels at the end of the hunt group) into the MANOOS state. A new call is routed to a channel that is in the MANOOS state only if all inserv channels are being used.

Manoos E1/T1 Channels

When all channels on a E1/T1 circuit card are in the MANOOS state, the circuit card generates a BLUE alarm to the switch. Calls are not routed to any of the channels on that E1/T1 circuit card.

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Assigning Groups to Channels

To assign an equipment group to channels:

1 Start at the Voice Equipment menu (Figure 60 on page 94) and select:

```
> Groups to Channels
    > Assign
```

The system displays the Assign Channels to Groups window (Figure 66).

Figure 66. Assign Channels to Groups Window

```
Assign Channels to Groups
Channels: _____________________________
  Groups: _____________________________
```

2 Enter the channel or range of channels that you want to assign to equipment groups in the `Channels:` field. Type a single channel number

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3 Enter the equipment group or groups to which you want to assign the channels in the `Groups:` field. Type a single equipment group number, or a range of equipment group numbers separated by commas or spaces. Valid equipment group numbers are 0 to 30.

Note: Equipment group 31 is a reserved group. It is used to specify channels that the system should ignore when it executes a soft seizure (**soft_szr** command). This allows you to mark certain channels as not being in the channel group specified by a soft seizure request on “any channel, any equipment group.” If a channel is assigned to equipment groups 0 and 31, it is only considered for soft seizures that specifically request equipment group 0.

4 Press **F3** (Save).

The system assigns the specified channels to the selected equipment groups.

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Unassigning Groups to Channels

To unassign an equipment group to channels:

1 Start at the Voice Equipment menu (Figure 60 on page 94) and select:

```
> Groups to Channels
    > Unassign
```

The system displays the Unassign Channels From Groups window (Figure 67).

Figure 67. Unassign Channels From Groups Window

```
Unassign Channels From Groups
Channels: _____________________
  Groups: _____________________
```

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3 Enter the equipment group or groups to which you want to unassign the channels in the `Groups:` field. Type a single equipment group number, or a range of equipment group numbers separated by commas or spaces. Valid equipment group numbers are 0 to 30, with equipment group 31 used as a reserved group.

4 Press **F3** (Save).

The system unassigns the specified channels from the selected equipment groups.

LSPS Functions

The LSPS Functions menu option allow you to assign functions to the LSPS circuit cards, or to change the currently assigned functions of LSPS circuit cards.

The LSPS card is in the UNASSIGNED state when it is first installed. The card cannot be put into service while in the UNASSIGNED state. You must

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Assigning LSPS Functions

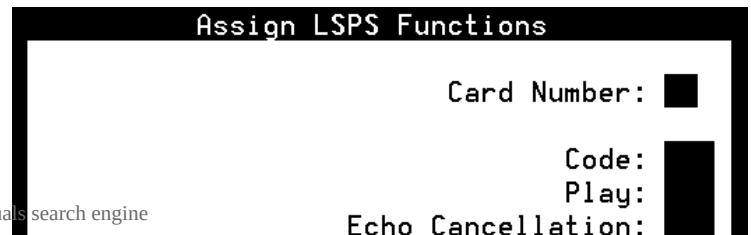
To assign functions to LSPS circuit cards:

1 Start at the Voice Equipment menu (Figure 60 on page 94) and select:

```
> LSPS Functions
    > Assign/Change LSPS Functions
```

The system displays the Assign LSPS Functions window (Figure 68).

Figure 68. Assign LSPS Functions Window



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CAUTION:
Be careful when making assignments and reassignments. Assignments made in the Assign LSPS Functions window overwrite any other assignments that are currently in effect on the specified circuit cards.

2 Enter a single number or press **F2** (Choices) to select from a menu in the `Card Number:` field. After entering the card number, the current settings are displayed.

3 In the remaining fields, enable the function with **Yes** or disable with **No**.

Several of these functions can be used in combination with one another, depending on the type of circuit card and the software installed. Table 8 on page 116 describes the valid functionality combinations.

CAUTION:
You *CANNOT* assign the same function to both an LSPS and an SSP card.

Note: If you move a speech function (such as play, code, echo

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Table 8. Valid LSPS Function Combinations

Function	Valid for LSPS?
Text-to-Speech	Yes
Code + Play	Yes
Code + FlexWord	Yes
Code + WholeWord	Yes
Code + WholeWord + Echo Cancellation	Yes
WholeWord + Echo Cancellation	Yes

Displaying LSPS Functions

To view the current assignments for the LSPS cards in your system:

1 Start at the Voice Equipment menu (Figure 60 on page 94) and select:

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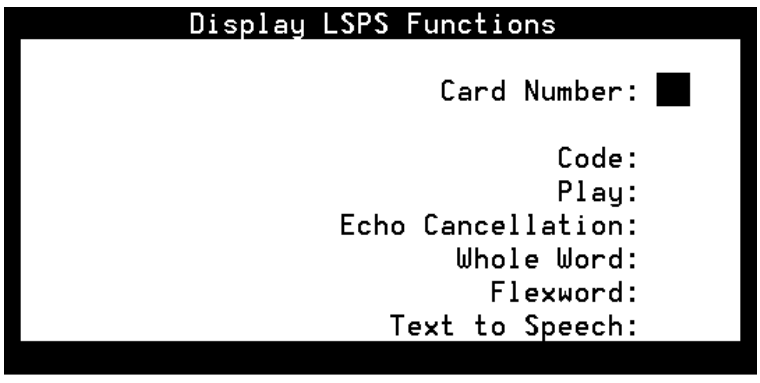
The system displays the Display LSPS Functions window (Figure 69).

Figure 69. Display LSPS Functions Window



2 In the `Card Number:` field, enter a single number or press **F2** (Choices) to select from a menu. After entering the card number, the current settings are displayed (Figure 70 on page 118).

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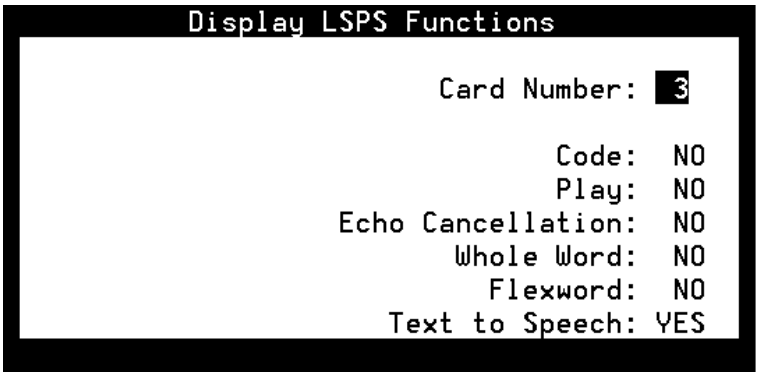
Figure 70. Example Display LSPS Functions Window



3 Press **F6** (Cancel) twice to return to the Voice Equipment menu (Figure 60 on page 94).

SSP Functions

Using the SSP Functions menu option, you can assign functions to SSP circuit cards or to change the functions that are currently assigned.

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Assigning SSP Functions

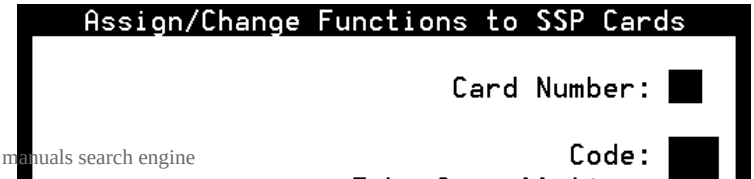
To assign functions to SSP circuit cards:

1 Start at the Voice Equipment menu (Figure 60 on page 94) and select:

```
> SSP Functions
    > Assign/Change SSP Functions
```

The system displays the Assign/Change Functions to SSP Cards window (Figure 71).

Figure 71. Assign/Change Functions to SSP Cards Window



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CAUTION:

Be careful when making assignments and reassignments. Assignments made in the Assign Functions to SSP Cards window overwrite any other assignments that are currently in effect on the specified circuit cards.

2 Enter a single number or press **F2** (Choices) to select from a menu in the `Card Number:` field. After entering the card number, the current settings are displayed.

3 In the remaining fields, enable the function with **Yes** or disable with **No**. The optional feature packages shown below may or may not appear in the Assign/Change Functions to SSP Cards window, depending on the software installed on your voice system.

All of these functions can be used in combination with one another. To assign a function, the software package supplying that function must be installed on the voice system.

CAUTION:

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Displaying SSP Functions

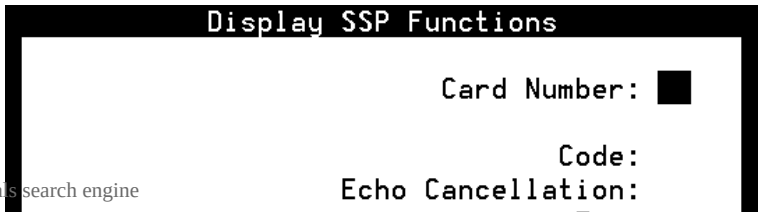
To view the current assignments for the SSP cards in your system:

1 Start at the Voice Equipment menu (Figure 60 on page 94) and select:

```
> SSP Functions
    > Display SSP Functions
```

The system displays the Display SSP Functions window (Figure 72).

Figure 72. Display SSP Functions Window



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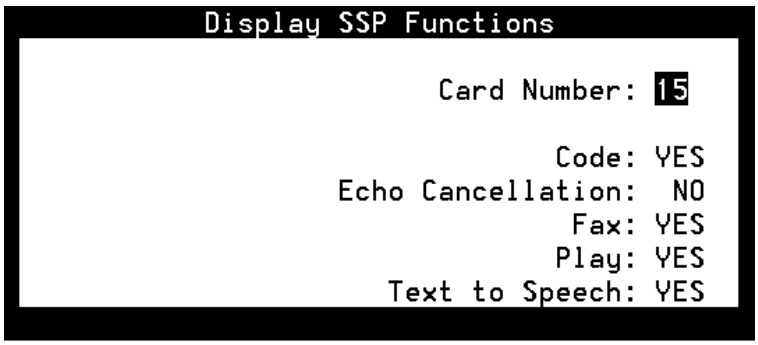
2 In the `Card Number:` field, enter a single number or press **F2** (Choices) to select from a menu. After entering the card number, the current settings are displayed (Figure 73).

Figure 73. Example Display SSP Functions Window



3 Press **F6** (Cancel) twice to return to the Voice Equipment menu (Figure 60 on page 94).

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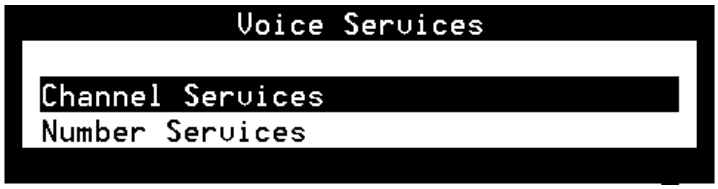
```
> Voice Services
```

The system displays the Voice Services menu (Figure 74).

Figure 74. Voice Services Menu



Channel Services

The Channel Services menu option allows you to assign, display, and unassign channel services.

To access the Channel Services menu:

1. Start at the Voice Services menu (Figure 74 on page 123) and select:

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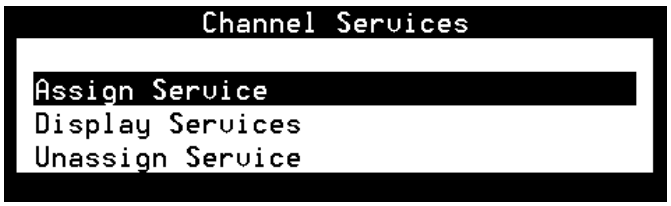
The system displays the Channel Services menu (Figure 75).

Figure 75. Channel Services Menu

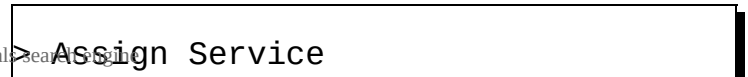


Assign Service

The Assign Services to Channels window allows you to specify the service or application to use for incoming calls on one or more channels.

To assign services to channels:

1 Start at the Channel Services menu (Figure 75 on page 124) and select:



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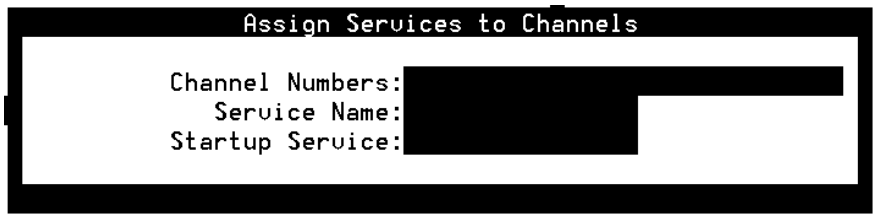
The system displays the Assign Services to Channels window (Figure 76).

Figure 76. Assign Services to Channels Window



2 In the `Channel Numbers:` field, enter the channel number or range of numbers.

Valid numbers range from 0 to the maximum number of channels in the system. You can enter multiple channels separated by commas or a range of channels using a dash. For example, an entry of **1, 3–5, 10** specifies channels 1, 3, 4, 5, and 10.

3 Enter the name of the service that will handle the incoming call in the

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special services are required for specific callers. DNIS (called party) is available with E1/T1 (E&M) and PRI.

Another special service name “ANI” (calling party) is available with PRI.

4 Leave the `Startup Service:` field blank.

5 Press **F3** (Save Assign).

The system assigns the indicated services to the selected channel or range of channels.

Display Channel Services

The Display Channel Services window displays all currently assigned channel services.

To display channel services:

1 Start at the Channel Services menu (Figure 75 on page 124) and select:

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The system displays the Display Channel Services window (Figure 77).

Figure 77. Display Channel Services Window

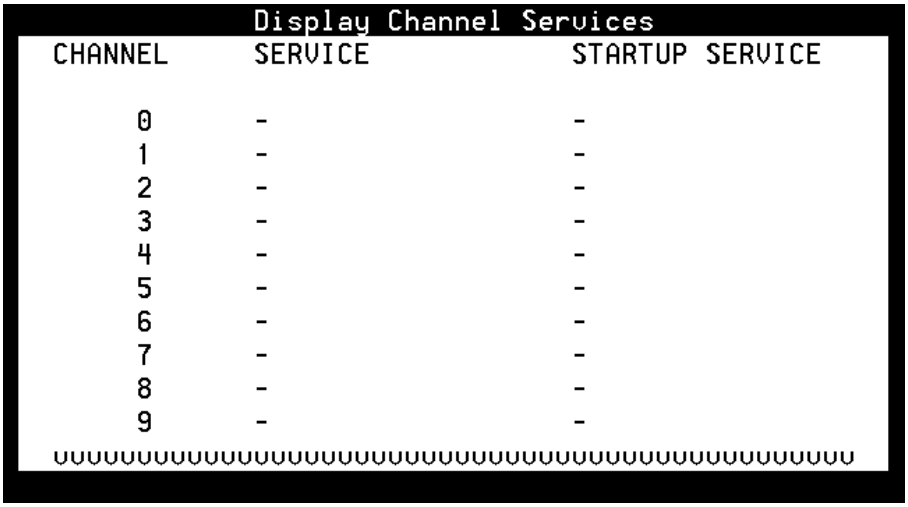

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Table 9 describes the columns in this window.

Table 9. Field Descriptions for the Display Channel Services Window

Column Name	Description
CHANNEL	Channel number assigned to the service displayed in the SERVICE column
SERVICE	Name of the service that corresponds to the channel number displayed in the CHANNEL column
STARTUP SERVICE	Name of the service that handles calls requiring special call set up procedures

Unassigning Channel Service

The Unassign Service menu option allows you to unassign services from one or more channels.

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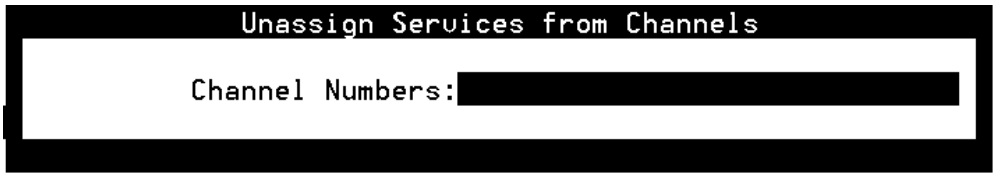
The system displays the Unassign Services from Channels window (Figure 78).

Figure 78. Unassign Services from Channels Window



2 Enter the channel number or range of numbers to be unassigned in the `Channel Numbers:` field.

Valid numbers range from 0 to the maximum number of channels in the system. You can enter multiple channels separated by commas or a range of channels using a dash. For example, an entry of **1, 3–5, 10** specifies channels 1, 3, 4, 5, and 10.

3 Press **F3** (Save).

The system unassigns the selected channel or range of channels.

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Number Services

The Number Services menu option allows you to assign, display, and unassign numbers services.

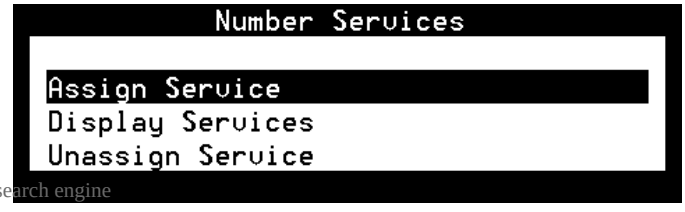
To access the Number Services menu:

1 Start at the Voice Services menu (Figure 74 on page 123) and select:

```
> Number Services
```

The system displays the Number Services menu (Figure 79).

Figure 79. Number Services Menu



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Assign Number Service

The Assign Services to Number window allows you to specify a service or application to use for incoming calls on the called number (DNIS) or calling number (ANI). It is only valid for channels assigned to *DNIS_SVC.

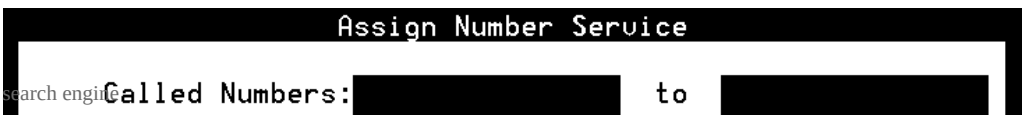
To assign number service:

1 Start at the Number Services menu (Figure 60 on page 94) and select:

```
> Assign Service
```

The system displays the Assign Number Service window (Figure 80).

Figure 80. Assign Number Service Window



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2 Enter a number, range of numbers, or **any** in the `Called Numbers:` field.

This number or range represents the telephone number or numbers to dial to reach the specified service. The number of digits must match those that the switch provides. You can enter numbers with a comma, a dash, or a space as delimiters. The first column contains a single number, the word *any*, or the first number in the range. The second column contains the last number in the range.

For example, to specify the extension 4876, enter **4876** in column 1 and leave column 2 blank. To specify any number, enter **any** in column 1 and leave column 2 blank. To specify a range 5554876–5555210, enter **555–4876** in column 1 and **555–5210** in column 2.

3 Enter the number, range of numbers, or in the `Calling Numbers:` field.

This number or range represents the caller's (or calling party) number or numbers. The number of digits must match those that the switch provides. You can enter numbers with a comma, a dash, or a space as delimiters. The first column contains a single number, the word *any*, or the first

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4 Enter a string of 16 characters or less in the `Service Name:` field or press **F2** (Choices) to select from a menu. This field represents the name of the service that handles the incoming call on the channel or channels.

5 Press **F3** (Save).

The system assigns a service to the specified number or numbers.

Displaying Number Services

The Display Number Services window displays all currently assigned number services.

Use this procedure to display number services:

1 Start at the Number Services menu (Figure 79 on page 130) and select:

```
> Display Services
```

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The system displays the Display Number Services window (Figure 81).

Figure 81. Display Number Services Window

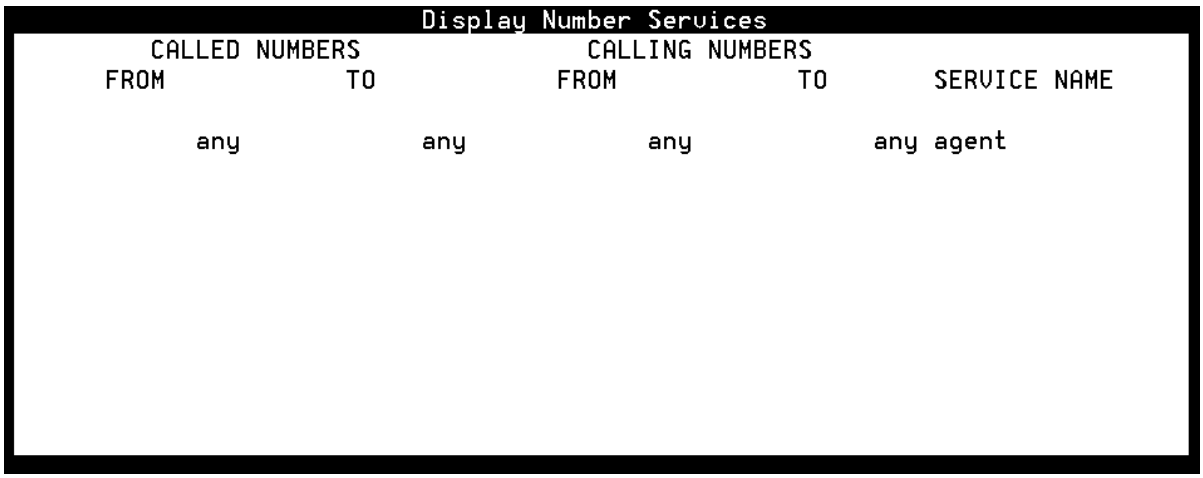

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Table 10 describes the columns in this window.

Table 10. Column Description for the Display Number Services Window

Column Name	Description
CALLED NUMBERS	Displays the called number corresponding to the service (E&M and PRI)
CALLING NUMBERS	Displays the calling number corresponding to the service (PRI)
SERVICE NAME	Displays the name of the service that corresponds to the called or calling number

Unassign Number Service

The Unassign Service menu option allows you to unassign services from one or more numbers.

To unassign number service:

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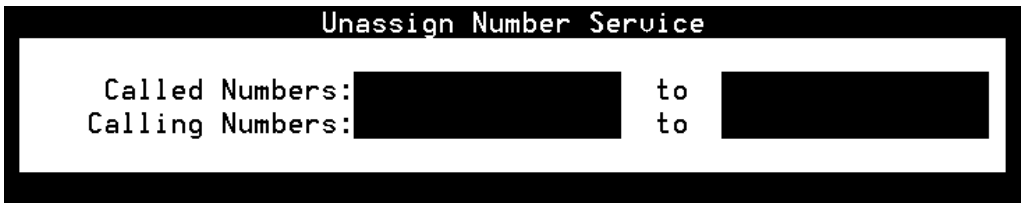
The system displays the Unassign Number Service window (Figure 82).

Figure 82. Unassign Number Service Window



2 Enter a number, range of numbers, or **any** in the `Called Numbers:` field.

This number or range represents the telephone number or numbers to dial to reach the specified service. The number of digits must match those that the switch provides. You can enter numbers with a comma, a dash, or a space as delimiters. The first column contains a single number, the word *any*, or the first number in the range. The second column contains the last number in the range.

For example, specify the single number 6145554876, enter **6145554876** in column 1 and leave column 2 blank. To specify any number, enter **any**

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This number or range represents the caller's (or calling party) number or numbers. The number of digits must match those that the switch provides. You can enter numbers with a comma, a dash, or a space as delimiters. The first column contains a single number, the word *any*, or the first number in the range. The second column contains the last number in the range.

For example, to specify the single number 6145554876, enter **6145554876** in column 1 and leave column 2 blank. To specify any number, enter **any** in column 1 and leave column 2 blank. To specify a range 5554876–5555210, enter **555–4876** in column 1 and **555–5210** in column 2.

4 Press **F3** (Save).

The system unassigns a service from the specified number or numbers.

Printing a Voice Equipment Report

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2 Select:

```
> Print
```

Note: You cannot print this report if a printer is not configured for use with the voice system. See Printer Administration on page 278 in Chapter 6, Peripheral Administration, for more information about printer administration.

FAX Administration

With the Next Generation FAX feature package, you can send and receive faxes. IRAPI commands are used to control the process.

For information on the IRAPI commands used to control FAX, see *UCS 1000 R4.2 Application Development with Advanced Methods*, 585-313-214:

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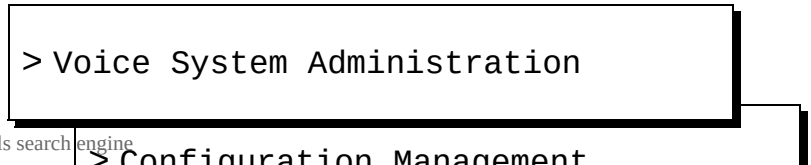
Log messages FAX001 (FAX print operation filed) and FAX002 (FAX record operation failed) are described in *UCS 1000 R4.2 System Reference*, 585-313-210, along with possible causes for the condition.

Product ID Required

The NGFAX feature package requires a unique identification number. To supply this number, access the Alarm Management window and, in the Product ID field, enter a 10-digit number starting with a "2". This number must be unique within other UCS 1000 R4.2 systems that will send or receive faxes. Follow the procedure below to access the Alarm Management window and complete the Product ID field:

1. Access the Administration menu. (See Accessing the Administration Menus on page 18 for instructions on how to access this menu.) From the Administration window, select the following menus:



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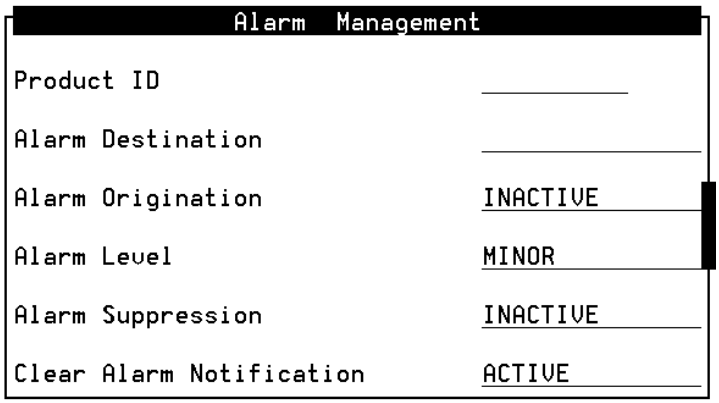
The Alarm Management window is displayed (Figure 83).

Figure 83. Alarm Management Window



2 In the Product ID field, enter a 10-digit number starting with a "2" that is unique within other UCS 1000 R4.2 systems that will be sending or receiving faxes. Do not enter information in the Alarm Destination field, even if the system prompts you for that information, and do not alter the information in the remaining fields.

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4 Switch Interface Administration

Overview

This chapter provides procedural information and reference information for administering the supported digital switch interfaces. The Switch Interfaces menu allows you to define the interaction between the system and the switches connected to it by allowing you to modify switch interface parameters and protocol options for digital interfaces.

Switch Interfaces Hardware

The circuit cards that provide digital interfaces have a unique card number (Card 1, Card 2...Card *n*) that corresponds to the card slot number. This card number is used in the fields and windows discussed in this chapter.

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Accessing the Switch Interfaces Menu

To access the Switch Interfaces menu:

1. At the `Console Login:` prompt, enter **root**

   The system prompts you for a password.

2. Enter your root password.

   The system displays the system prompt #.

3. Enter **cvis_menu**

   The system displays the Voice System Administration menu (Figure 84).

Figure 84. Voice System Administration Menu

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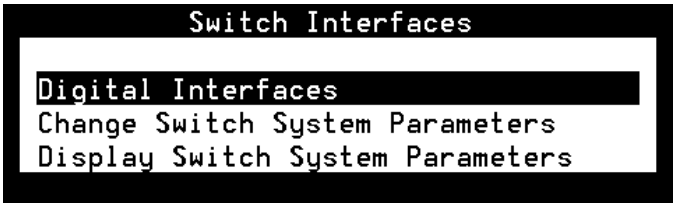
4 Select:

```
> Switch Interfaces
```

5 Press **ENTER**.

The system displays the Switch Interfaces menu (Figure 85).

Figure 85. Switch Interfaces Menu



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Digital Interfaces

Digital interfaces are administered on a card-by-card basis; that is, digital parameters apply to individual digital circuit cards installed in the system.

The digital interfaces currently support the E1/T1 digital circuit card with the following protocols:

- T1 A/B Robbed-bit E&M
- E1 CAS
- ISDN-Primary Rate Interface (PRI)

The process of administering the digital interfaces consists of selecting a protocol based on the circuit card type and either accepting the default values as displayed or changing the default values.

Accessing the Digital Interfaces Menu

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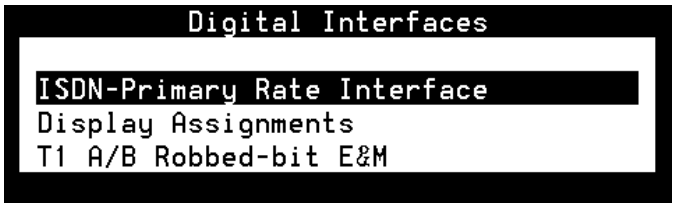
To access the Digital Interfaces menu:

1 Start at the Switch Interfaces menu (Figure 85 on page 143) and select:

```
> Digital Interfaces
```

The system displays the Digital Interfaces menu (Figure 86).

Figure 86. Digital Interfaces Menu



Note: Figure 86 displays the installed digital protocol packages. A package must be installed before it is displayed in this menu.

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Displaying Digital Interface Assignments

The Display Digital Interface Assignments window displays the E1/T1 circuit cards installed in the voice system and the function to which each is assigned.

To display the installed E1/T1 circuit cards and their digital protocol assignments:

1 Start at the Digital Interfaces menu (Figure 86 on page 145) and select:

```
> Display Assignments
```

The system displays the Display Digital Interface Assignments window (Figure 87 on page 147).

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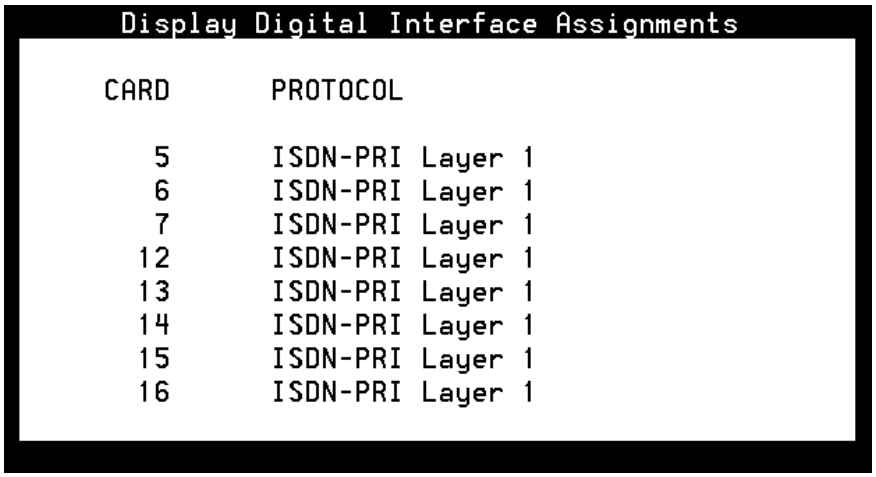
Figure 87. Display Digital Interface Assignments



By default, a circuit card is marked *unassigned*. A protocol must be installed on the voice system before it can be assigned to an E1/T1 card (CWB2).

See “E1/T1 Circuit Cards,” in Chapter 2, “Installing or Replacing Circuit Cards,” in *UCS 1000 R4.2 Maintenance*, 585-313-126, for more

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Table 11. Valid Parameter and Default Values for E1/T1 Digital Protocols

Field Name	Valid Parameter Values	Protocol Name		
		T1 A/B Robbed-bit E&M Default	ISDN-PRI Layer 1	E1 CAS
Framing/ Line Coding	D4ZCS, ESFB8ZS, CEPTHDB3	D4ZCS	ESFB8ZS	CEPTHDB3
DTMF Muting	Yes, No	Yes	Yes	Yes
CSU Distance	0–666 feet	0–133 feet	0–133 feet	—
Wink Time	10–2550 msec	230 msec	—	—
Post Wink Delay[1]	10–2550 msec	80 msec	—	—
Max. Digits in Called Number[1]	0–16	4	—	4

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Table 11. Valid Parameter and Default Values for E1/T1 Digital Protocols

Field Name	Valid Parameter Values	Protocol Name		
		T1 A/B Robbed-bit E&M Default	ISDN-PRI Layer 1	E1 CAS
Outgoing Speech Volume	0–32000 (-30 to +30 dB)	707	707	707
Outgoing Addressing Type	MFC	—	—	MFC
Incoming Addressing Type	MFC	—	—	MFC
Outgoing Text Volume[2]	0–32000 (-30 to +30 dB)	1000	1000	1000

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T1 A/B Robbed-bit E&M Protocol

Make sure that the switch to which the system is connected is programmed with the following options:

- The T1 interface uses wink start robbed-bit E&M signaling on a link using D4 framing with zero code suppression (ZCS).
- The E1/T1 interface outpulses dual tone multifrequency (DTMF) tones at 7 pulses per second when originating outbound calls and requires DTMF when taking inbound calls.

Accessing T1 A/B Robbed-bit E&M Menu

To access the T1 A/B Robbed-bit E&M menu:

1 Start at the Digital Interfaces menu (Figure 86 on page 145) and select:

```
> T1 A/B Robbed-bit E&M
```

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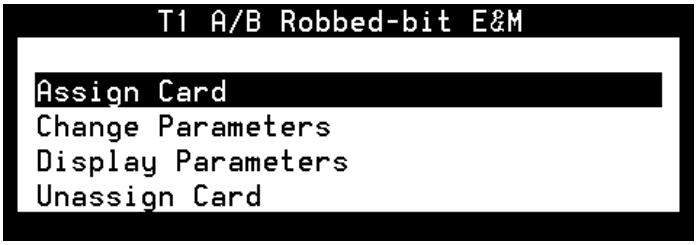
The system displays the T1 A/B Robbed-bit E&M menu (Figure 88).

Figure 88. T1 A/B Robbed-bit E&M Menu



Assigning T1 A/B Robbed-bit E&M to Digital Circuit Cards

Note: Before a new protocol can be assigned to a circuit card, any existing protocol must first be *unassigned*. See Unassigning T1 A/B Robbed-bit E&M to Digital Circuit Cards on page 161 below for more information.

Before attempting to make any assignment changes to circuit cards, they must be in the MANOOS state. See Equipment State on page 103 in Chapter 3, Voice System Administration, for more information.

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To assign the T1 A/B Robbed-bit E&M protocol to a digital circuit card:

1 Start at the T1 A/B Robbed-bit E&M menu (Figure 88 on page 151) and select:

```
> Assign Card
```

The system displays the Assign Card: T1 A/B Robbed-bit E&M window (Figure 89 on page 153).

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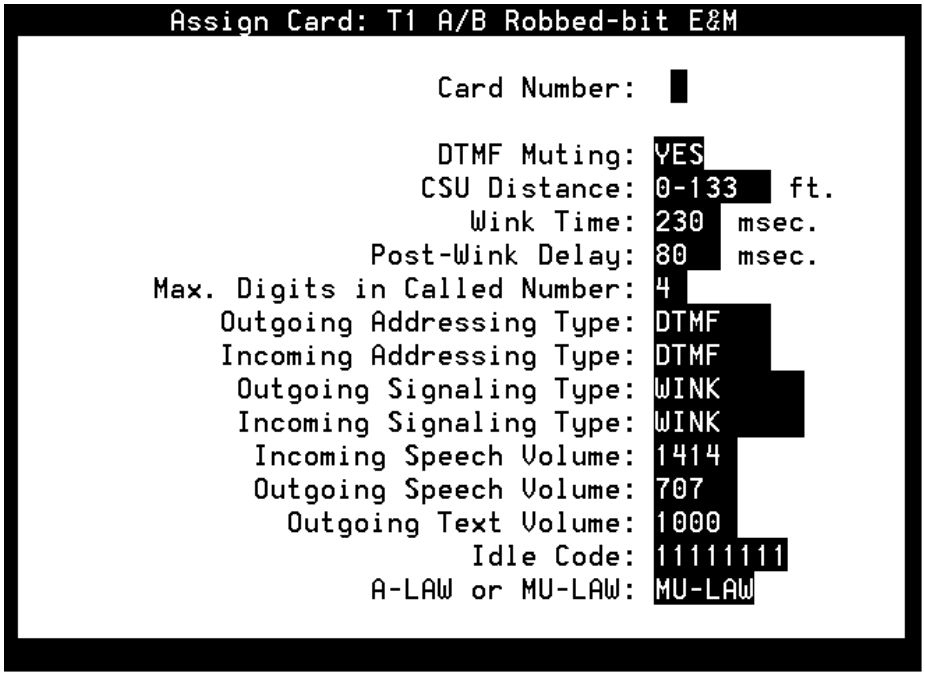
Figure 89. Assign Card: T1 A/B Robbed-bit E&M Window


Assign Card: T1 A/B Robbed-bit E&M
Card Number:
DTMF Muting: YES
CSU Distance: 0-133 ft.
Wink Time: 230 msec.
Post-Wink Delay: 80 msec.
Max. Digits in Called Number: 4
Outgoing Addressing Type: DTMF
Incoming Addressing Type: DTMF
Outgoing Signaling Type: WINK
Incoming Signaling Type: WINK
Incoming Speech Volume: 1414
Outgoing Speech Volume: 707
Outgoing Text Volume: 1000
Idle Code: 11111111
A-LAW or MU-LAW: MU-LAW

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3 Enter **Yes** to enable or **No** to disable in the `DTMF Muting:` field, or press **F2** (Choices) to select from a menu. **Yes** is the default.

Enter **Yes** to use dual-tone multifrequency (DTMF) muting to reduce false DTMF recognitions. Such false recognitions sometimes result from the network echoing back sounds that the voice system falsely recognizes as touchtones.

Enter **No** when the interface is used for bridging; DTMF needs to pass through without muting.

4 Enter the cable distance in feet between the Channel Service Unit (CSU) and the voice system in the `CSU Distance:` field, or press **F2** (Choices) to select from a menu. Valid values are 0–133, 134–266, 267–399, 400–533, and 534–666. The default is **0–133**. If there is no CSU, the value entered in this field should be the cable distance between the voice system and the equipment to which it is connected.

5 Enter the desired wink time in multiples of 10 between 10 and 2550 milliseconds in the `Wink Time:` field. The default is **230**. This specifies the

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8 Enter the type of addressing to be used with outgoing calls, either **DTMF**, **MF**, or **DECADIC** in the `Outgoing Addressing Type:` field. The default is **DTMF**.

9 Enter the type of addressing to be used with incoming calls, either **DTMF**, **MF**, or **DECADIC** in the `Incoming Addressing Type:` field. The default is **DTMF**.

10 Enter the type of signaling to be used with outgoing calls, either **Wink** or **Immediate** in the `Outgoing Signaling Type:` field. The default is **Wink**.

11 Enter the type of signaling to be used with incoming calls, either **Wink** or **Immediate** in the `Incoming Signaling Type:` field. The default is **Wink**.

12 Enter the volume adjustment for all incoming speech on circuit cards in the `Incoming Speech Volume:` field. Valid values are 0 to 32000. Note that values less than 100 or greater than 8000 may distort the incoming speech. The default is **1414**.

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speech before it is coded, 2000 doubles it a second time, 2828 doubles it a third time, and so on.

To decrease the incoming speech volume, multiply by 0.707 to approximately half the value or decrease it by 3 dB. Therefore, a value of 707 in the field reduces the volume by half, 500 by half a second time, and so on.

See Table 15 on page 192 for the relationship between the volume number and the actual change in volume expressed in decibels.

Note: The incoming speech volume value is set on a per-card basis for digital circuit cards.

13 Enter the volume adjustment for all outgoing speech played on the circuit card in the `Outgoing Speech Volume:` field. Valid values range from 0 to 32000. The default is **707**.

The value in this field and its effect are the same as described for the `Incoming Speech Volume:` field. Any adjustment is applied to recorded speech as it is processed for playback.

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15 Ignore the last two fields: `Idle Code:` and `A-LAW or MU-LAW:`.

16 Press **F3** (Save).

The system assigns the protocol to the selected circuit card.

Change T1 A/B Robbed-bit E&M Parameters

The circuit card must first be assigned to the T1 A/B Robbed-bit E&M protocol to use this procedure. See Assigning T1 A/B Robbed-bit E&M to Digital Circuit Cards on page 151 for more information about making the initial assignment.

Note: Before attempting to make any assignment changes to circuit cards, they must be in the MANOOS state. See Equipment State on page 103 in Chapter 3, Voice System Administration, for additional information.

If you change digital protocol assignments on the voice system, you must also make the change on the switch.

To change the T1 A/B Robbed-bit E&M parameters:

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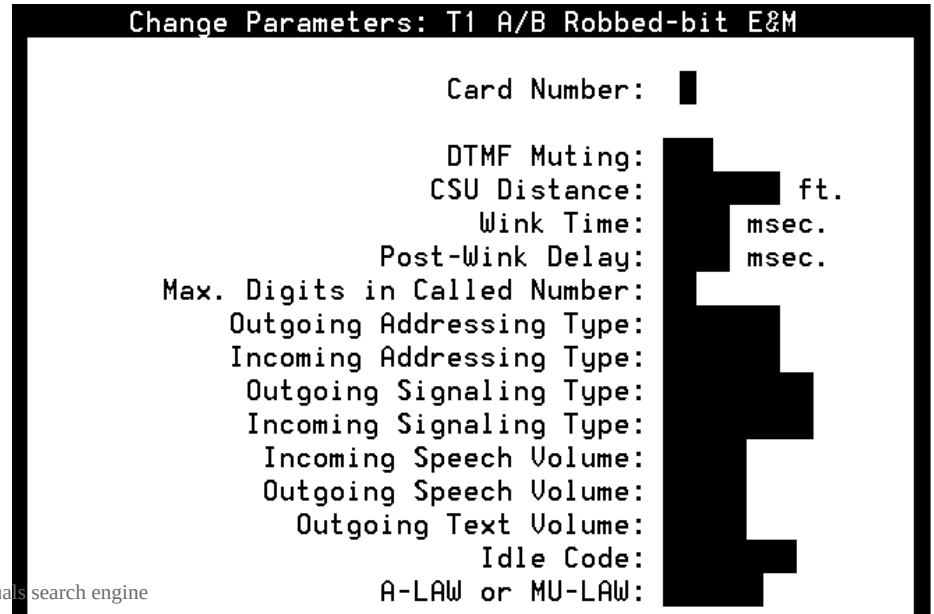
The system displays the Change Parameters: T1 A/B Robbed-bit E&M window (Figure 90).

Figure 90. Change Parameters: T1 A/B Robbed-bit E&M Window



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The `Card Number:` field is blank in Figure 90 on page 158. After you enter the circuit card number, certain E1-only fields disappear (`Idle Code:`, `A-LAW or MU-LAW:`, and `CRC:`).

3 Change any of the parameters as described in Assigning T1 A/B Robbed-bit E&M to Digital Circuit Cards on page 151.

4 Press **F3** (Save).

The system changes the protocol parameters on the selected circuit card.

Displaying T1 A/B Robbed-bit E&M Parameters

The circuit card must first be assigned to the T1 A/B Robbed-bit E&M protocol to use this procedure. See Assigning T1 A/B Robbed-bit E&M to Digital Circuit Cards on page 151 for more information about making the initial assignment.

To display the T1 A/B Robbed-bit E&M parameters:

1 Start at the T1 A/B Robbed-bit E&M menu (Figure 88 on page 151) and select:

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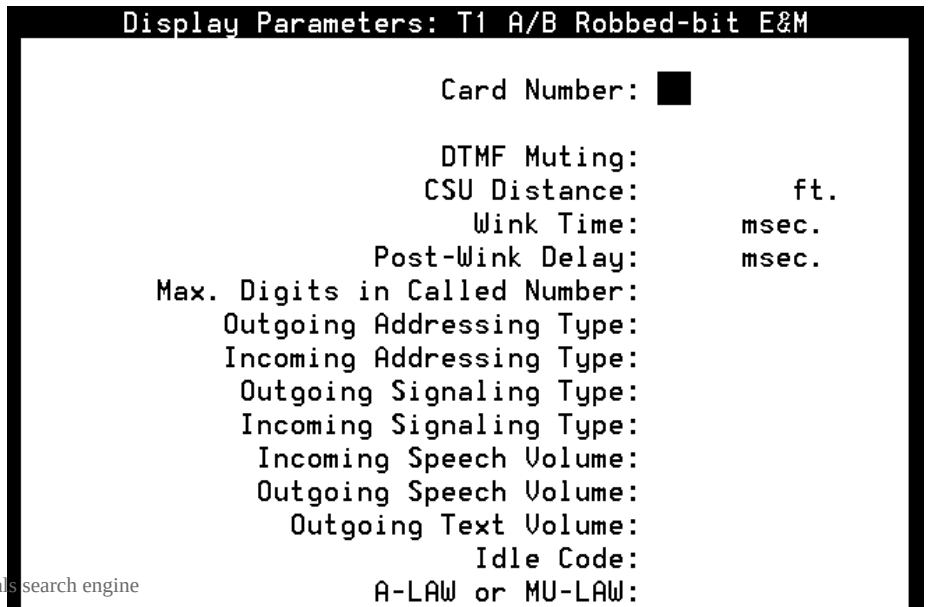
The system displays the Display Parameters: T1 A/B Robbed-bit E&M window (Figure 91).

Figure 91. Display Parameters: T1 A/B Robbed-bit E&M Window



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The `Card Number:` field is blank in Figure 91. After you enter the circuit card number, certain E1-only fields disappear (`Idle Code:`, `A-LAW or MU-LAW:`, and `CRC:`).

The system displays the parameter values for the selected circuit card.

3 Press **F6** (Cancel) to return to the T1 A/B Robbed-bit E&M menu.

Unassigning T1 A/B Robbed-bit E&M to Digital Circuit Cards

Note: Before attempting to make any assignment changes to circuit cards, they must be in the MANOOS state. See Equipment State on page 103 in Chapter 3, Voice System Administration, for additional information.

If you also change digital protocol assignments on the voice system, you must make the change on the switch.

To unassign the T1 A/B Robbed-bit E&M protocol to a digital circuit card:

1 Start at the T1 A/B Robbed-bit E&M menu (Figure 88 on page 151) and select:

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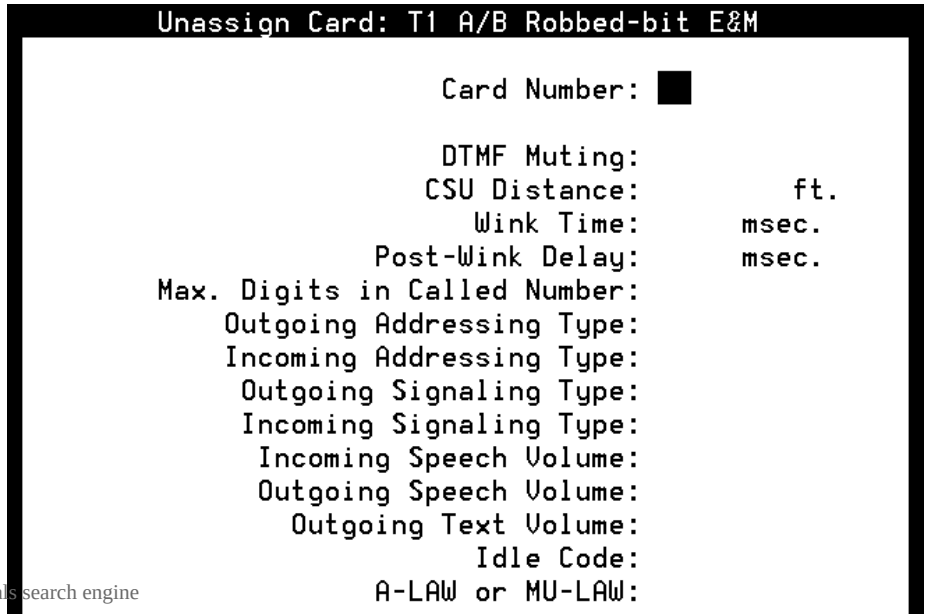
The system displays the Unassign Card: T1 A/B Robbed-bit E&M window (Figure 92).

Figure 92. Unassign Card: T1 A/B Robbed-bit E&M Screen



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3 Press **F3** (Save).

The system removes the T1 A/B Robbed-bit E&M assignment from the selected circuit card.

4 Press **F6** (Cancel) repeatedly to return to the Digital Interfaces menu.

E1 CAS Protocols

The UCS 1000 R4.2 supports the E1 Channel Associated Signaling (CAS) protocol Mexico for use with the DEFINITY switch.

The following CAS protocol is supported with the installation of the corresponding switch integration packages:

- Digital R2 MFC - Mexico

Digital R2 MRC - Mexico Protocol

Accessing Digital R2 MFC - Mexico Menu

To access the E1 CAS for Mexico protocol menu:

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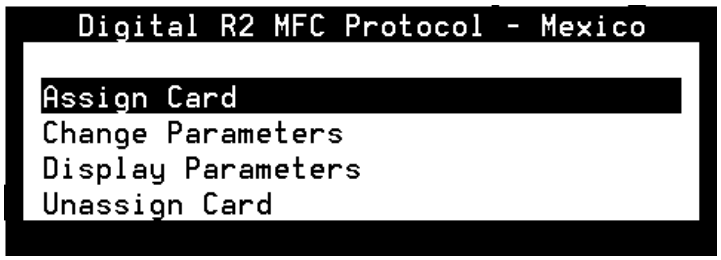
The system displays the Digital R2 MFC Protocol - Mexico menu (Figure 93).

Figure 93. Digital R2 MFC Protocol - Mexico Menu



Use the procedures below to assign or unassign the Digital R2 MFC - Mexico protocol to or from digital circuit cards, and administer the switch interface parameters.

Assigning the Digital R2 MFC - Mexico Protocol to E1 Circuit Cards

Note: Before a new protocol can be assigned to a circuit card, any existing protocol must first be "unassigned." See Unassigning the

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If you also change digital protocol assignments on the voice system, you must make the change on the switch.

To assign the Mexico protocol to an E1 circuit card:

1 Start at the Digital R2 MFC Protocol - Mexico menu (Figure 93 on page 164) and select:

```
> Assign Card
```

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The system displays the Assign Card: Digital R2 MFC Protocol - Mexico window (Figure 94).

Figure 94. Assign Card: Digital R2 MFC Protocol - Mexico Window

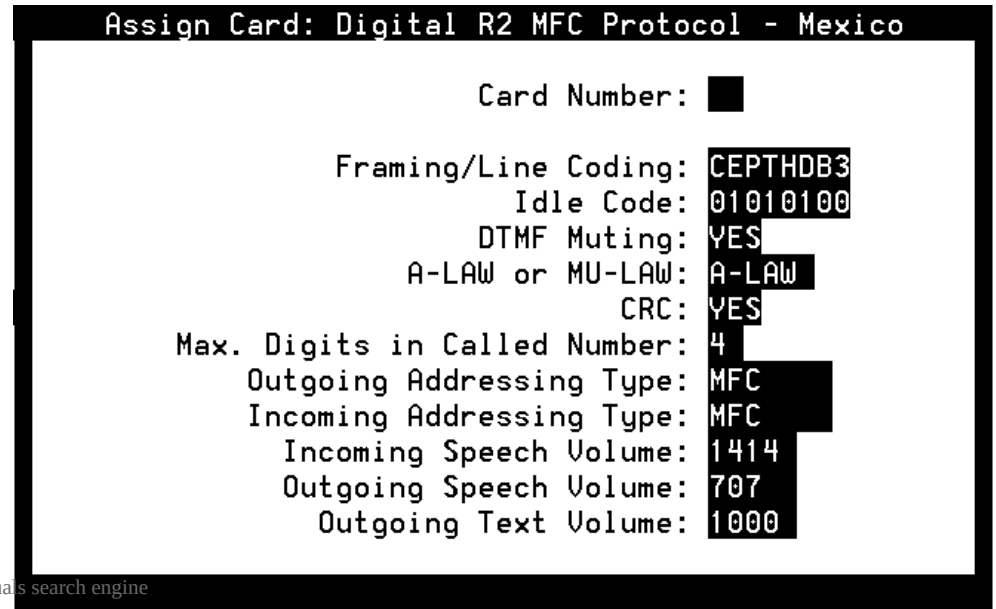

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Table 12. Parameter Values for Assign Card: Digital R2 MFC - Mexico Window

Field Name	Value
Framing/Line Coding:	**CEPTHDB3**
Idle Code:	**01010100**
DTMF Muting:	**Yes**
A-LAW or MU-LAW:	**A-LAW**
CRC:	**Yes**
Max. Digits in Called Number:	**4**
Outgoing Addressing Type:	**MFC**
Incoming Addressing Type:	**MFC**
Incoming Speech Volume:	**1414**
Outgoing Speech Volume:[1]	**707**

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Changing Digital R2 MFC - Mexico Parameters

The E1 circuit card must first be assigned to the Digital R2 MFC - Mexico protocol to use this procedure. See Assigning the Digital R2 MFC - Mexico Protocol to E1 Circuit Cards on page 164 for more information about making the initial assignment.

Note: Before attempting to make any assignment changes to circuit cards, they must be in the “manoos” state. See Equipment State on page 103 in Chapter 3, Voice System Administration, for additional information.

If you change digital protocol assignments on the voice system, you must also make the change on the switch.

To change the Digital R2 MFC - Mexico parameters:

1 Start at the Digital R2 MFC Protocol - Mexico menu (Figure 93 on page 164) and select:

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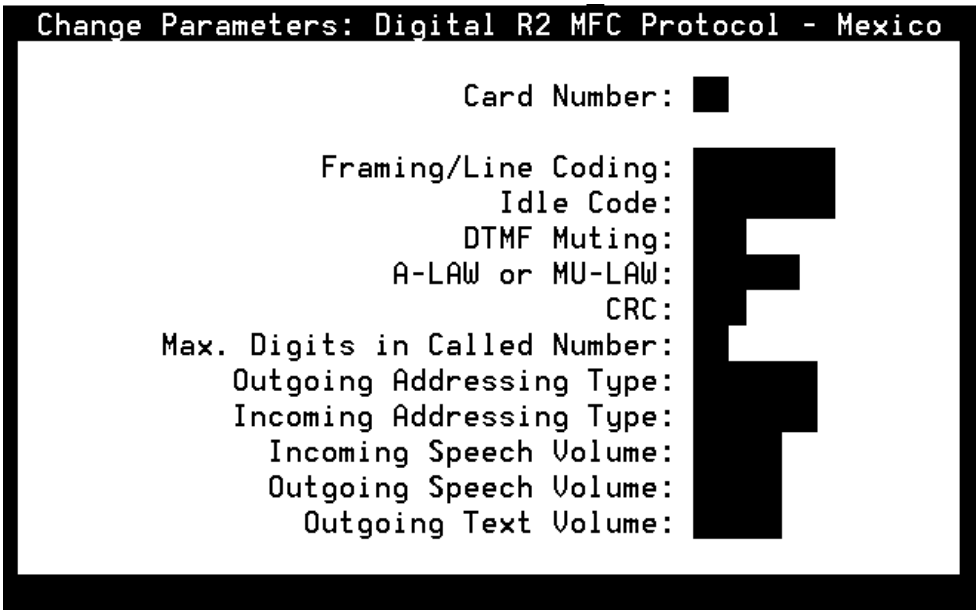
Figure 95. Change Parameters: Digital R2 MFC Protocol - Mexico Window



2 Enter the circuit card number in the **`Card Number:`** field, or press **`F2`** (Choices) to select from a menu. Initially, all fields are populated with the

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Displaying Digital R2 MFC - Mexico Parameters

The E1 circuit card must first be assigned to the Digital R2 MFC - Mexico protocol to use this procedure. See Assigning the Digital R2 MFC - Mexico Protocol to E1 Circuit Cards on page 164 for more information about making the initial assignment.

To display the Digital R2 MFC - Mexico parameters of an E1 circuit card:

1 Start at the Digital R2 MFC Protocol - Mexico menu (Figure 93 on page 164) and select:

```
> Display Parameters
```

The system displays the Display Parameters: Digital R2 MFC Protocol - Mexico window (Figure 96 on page 171).

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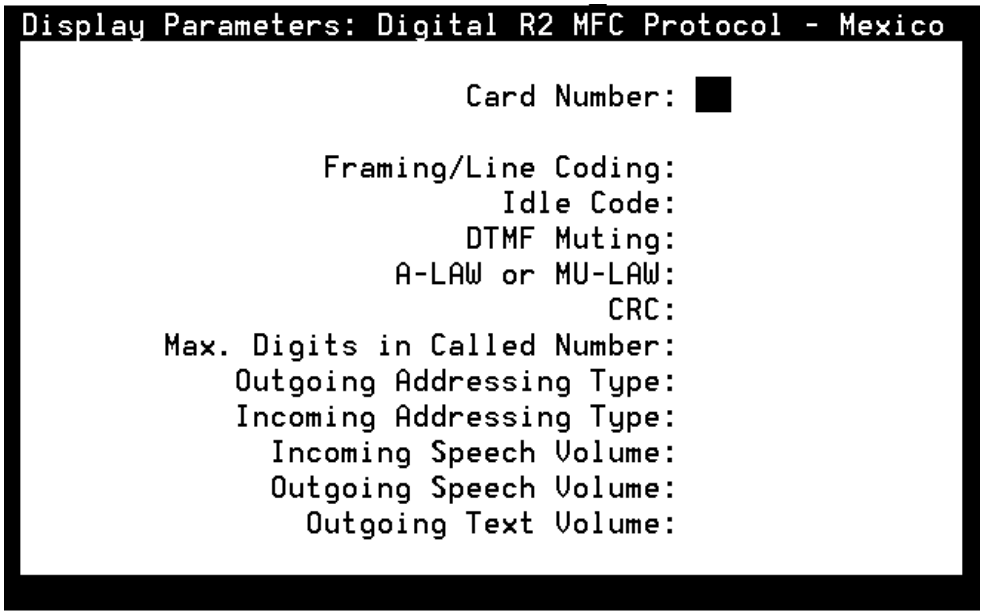
Figure 96. Display Parameters: Digital R2 MFC Protocol - Mexico Window



2 Enter the circuit card number in the **`Card Number:`** field, or press **`F2`** (Choices) to select from a menu.

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Unassigning the Digital R2 MFC - Mexico Protocol to E1 Circuit Cards

Note: Before attempting to make any assignment changes to circuit cards, they must be in the “manoos” state. See Equipment State on page 103 in Chapter 3, Voice System Administration, for additional information.

To unassign the Digital R2 MFC - Mexico protocol:

1. Start at the Digital R2 MFC Protocol - Mexico menu (Figure 93 on page 164) and select:

```
> Unassign Card
```

The system displays the Unassign Card: Digital R2 MFC Protocol - Mexico window (Figure 97 on page 173).

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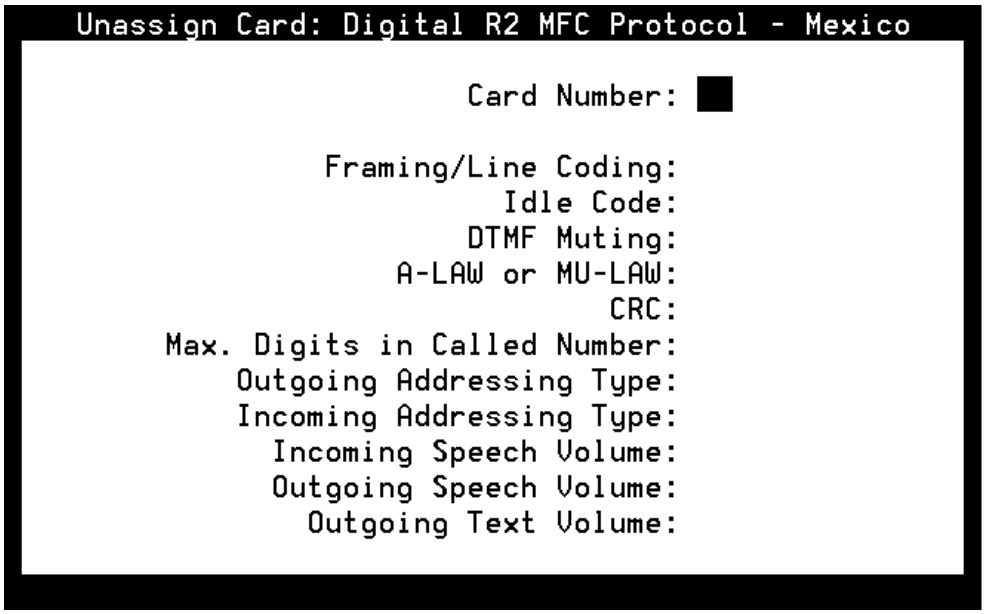
Figure 97. Unassign Card: Digital R2 MFC Protocol - Mexico Window



2 Enter the circuit card number in the **`Card Number:`** field, or press **`F2`** (Choices) to select from a menu.

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3 Press **F3** (Save).

The system removes the Digital R2 MFC - Mexico protocol assignment from the selected circuit card.

4 Press **F6** (Cancel) repeatedly to return to the Digital Interfaces menu.

ISDN-PRI Layer 1 Protocol

Accessing the ISDN-PRI Layer 1 Menu

Note: All selected options must match the corresponding options on the network switch. If they do not, service problems can occur.

To access the ISDN-Primary Rate Interface (ISDN-PRI) Layer 1 menu:

1 Start at the Digital Interfaces menu (Figure 86 on page 145) and select:

```
> ISDN-Primary Rate Interface
```

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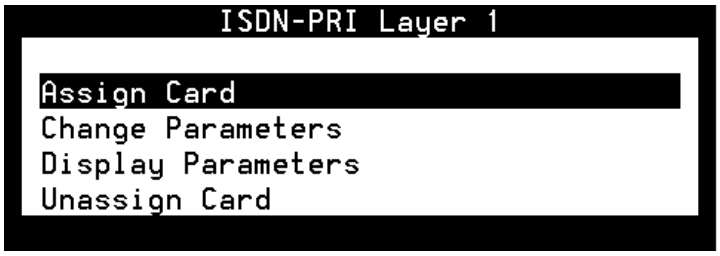
Figure 98. ISDN-PRI Layer 1 Menu



Assigning an ISDN-PRI Layer 1 to Digital Circuit Cards

Note: Before a new protocol can be assigned to a circuit card, any existing protocol must first be *unassigned*. See Unassigning T1 A/B Robbed-bit E&M to Digital Circuit Cards on page 161 for more information.

Before attempting to make any assignment changes to circuit cards, they must be in the MANOOS state. See Equipment State on page 103 in Chapter 3, Voice System Administration, for additional information.

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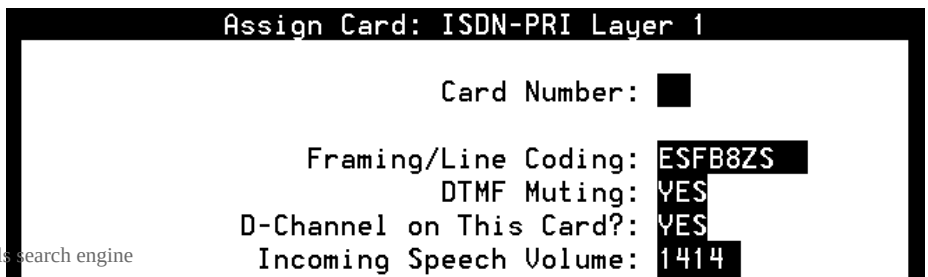
To assign the ISDN-PRI Layer 1 to a digital circuit card:

1 Start at the ISDN-PRI Layer 1 menu (Figure 98 on page 175) and select:

```
> Assign Card
```

The system displays the Assign Card: ISDN-PRI Layer 1 window (Figure 99).

Figure 99. Assign Card: ISDN-PRI Layer 1 Window



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2 Enter the circuit card number in the `Card Number:` field, or press **F2** (Choices) to select from a menu. Initially, all fields are populated with the default values for the circuit card number entered.

3 Enter the framing/line coding in the `Framing/Line Coding:` field, or press **F2** (Choices) to select from a menu. The valid values for T1 PRI are **D4ZCS** or **ESFB8ZS**. **ESFB8ZS** is the default.

4 Enter **Yes** to enable or **No** to disable in the `DTMF Muting:` field, or press **F2** (Choices) to select from a menu. **Yes** is the default.

Enter **Yes** to use dual-tone multifrequency (DTMF) muting to reduce false DTMF recognitions. These false recognitions sometimes result from the network echoing back sounds that the voice system falsely recognizes as touch tones.

Enter **No** when the interface is used for bridging; DTMF needs to pass through without muting.

5 Enter **Yes** or **No** to specify whether the circuit card carries the D-channel in the `D-channel on this Card?:` field, or press **F2** (Choices) to select

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Up to 13 PRI T1 circuit cards can have a D-channel. The voice system supports up to 13 23B+D interfaces (each with its own D-channel and each set to **Yes** in this field) or up to 311 B+D (where one card has the D-channel and the other twelve cards are controlled by that D-channel and are set to **No** in this field since they do not have a D-channel). The system also supports configurations with 2 to 12 D-channels. Typically, each E1 PRI interface has its own D-channel and the system supports up to three 30B+D interfaces.

6 Enter the volume adjustment for all incoming speech on circuit cards in the `Incoming Speech Volume:` field. Valid values are 0 to 32000. Note that values less than 100 or greater than 8000 may distort the incoming speech. The default is **1414**.

Any adjustment occurs before the system processes the incoming speech for coding it later for playback. The value in the `Incoming Speech Volume:` field represents a gain applied to the speech input using a logarithmic scale. A value of 1000 equals no gain; that is, the input is coded at the same level as it is received. Multiplying by 1.414 (the square

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To decrease the incoming speech volume, multiply by 0.707 to approximately half the value or decrease it by 3 dB. Therefore, a value of 707 in the field reduces the volume by half, 500 by half a second time, and so on.

See Table 15 on page 192 for the relationship between the volume number and the actual change in volume expressed in decibels.

Note: The incoming speech volume value is set on a per-card basis for digital circuit cards.

7 Enter the volume adjustment for all outgoing speech played on the circuit card in the `Outgoing Speech Volume:` field. Valid values range from 0 to32000. The default is **707**.

The value in this field and its effect are the same as described for the `Incoming Speech Volume:` field. Any adjustment is applied to recorded speech as it is processed for playback.

CAUTION:

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10 Enter the cable distance, in feet, between the Channel Service Unit (CSU) and the voice system in the `CSU Distance:` field, or press **F2** (Choices) to select from a menu. Valid values are 0–133, 134–266, 267–399, 400–533, and 534–666. The default is **0–133**. If there is no CSU, the value entered in this field should be the cable distance between the voice system and the equipment to which it is connected.

11 (E1 only) Enter **Yes** to enable the cyclical redundancy check error checking or **No** to disable the error checking in the `CRC:` field.

12 (Optional) Enter the outgoing volume of speech in the `Outgoing Text Volume:` field. Valid values are 0 to 32000 (-30 to +30 dB). The default is **1000**.

Note: This field is displayed only if the optional SSP Text-to-Speech package is installed. This field only applies to SSP Text-to-Speech output volume. The LSPS output volume can not be changed.

13 Press **F3** (Save).

The system saves the parameter information and assigns the ISDN-PRI

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PRI Layer 2 and Layer 3 Parameters

Your PRI service provider may need to know some Layer 2 and Layer 3 parameters used by the voice system. Table 13 and Table 14 on page 182 provide a list of the most commonly requested parameters. Incoming calls to the voice system should be provisioned so that the channel number is exclusive and not preferred.

If the switch is configured to deliver ANI on a subscription basis, it is not possible for the voice system to request a different type of ANI on a call-by-call basis.

While it is not recommended to change timer values from their defaults, the **/vs/man/cat4/pri.rc.4** manual page describes how PRI timer values and a few other parameters can be changed if that becomes necessary.

Table 13. PRI Layer 2 Parameters

Layer 2 Parameter	Value
Retry Count N200	3
Timer T200	1 seconds

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Table 14. PRI Layer 3 Parameters

Layer 3 Parameter	Value (seconds)
Timer T302	15
Timer T303	4
Timer T305	4
Timer T308	4
Timer T310	10
Timer T313	4
Timer T316	120
Timer T3M1	120
Timer T309	30

Changing ISDN-PRI Layer 1 Card The circuit card must first be assigned to the ISDN-PRI Layer 1 protocol to use this procedure. See Assigning an ISDN-PRI Layer 1 to Digital Circuit

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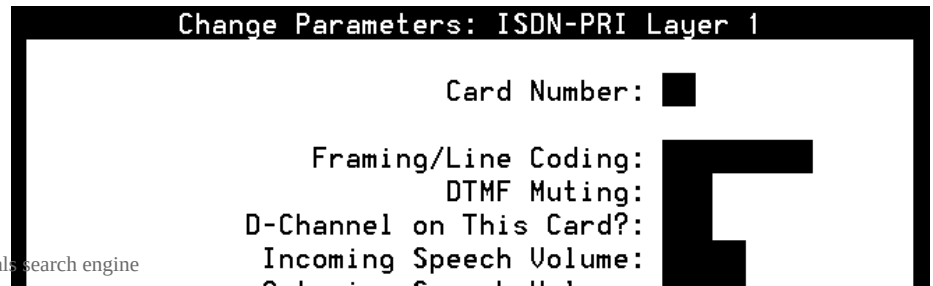
To change the ISDN-PRI Layer 1 parameters:

1 Start at the ISDN-PRI Layer 1 menu (Figure 98 on page 175) and select:

```
> Change Parameters
```

The system displays the Change Parameters: ISDN-PRI Layer 1 window (Figure 100).

Figure 100. Change Parameters: ISDN-PRI Layer 1 Window



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2 Enter the circuit card number in the `Card Number:` field, or press **F2** (Choices) to select from a menu. Initially, all fields are populated with the default values for the circuit card number entered.

3 Change any of the parameters as described in Assigning an ISDN-PRI Layer 1 to Digital Circuit Cards on page 175.

4 Press **F3** (Save).

The system changes the specified parameters for the selected circuit card.

Displaying ISDN-PRI Layer 1 Parameters

The circuit card must first be assigned to the ISDN-PRI Layer 1 protocol to use this procedure. See Assigning an ISDN-PRI Layer 1 to Digital Circuit Cards on page 175 for more information about making the initial assignment.

To display the ISDN-PRI Layer 1 parameters:

1 Start at the ISDN-PRI Layer 1 menu (Figure 98 on page 175) and select:

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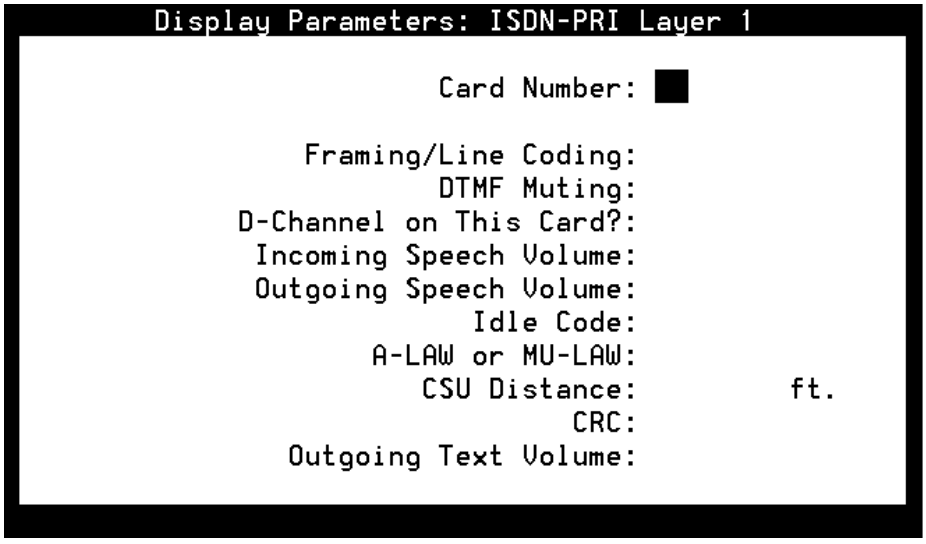
The system displays the Display Parameters: ISDN-PRI Layer 1 window (Figure 101).

Figure 101. Display Parameters: ISDN-PRI Layer 1 Window



2 Enter the circuit card number in the `Card Number:` field, or press **F2**

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Unassigning ISDN-PRI Layer 1 Card

Note: Before attempting to make any assignment changes to circuit cards, they must be in the MANOOS state. See Equipment State on page 103 in Chapter 3, Voice System Administration, for additional information. If you change digital protocol assignments on the voice system, you must also make the change on the switch.

To unassign the ISDN-PRI Layer 1 protocol to a digital circuit card:

1 Start at the ISDN-PRI Layer 1 menu (Figure 98 on page 175) and select:

```
> Unassign Card
```

The system displays the Unassign Card: ISDN-PRI Layer 1 window (Figure 102 on page 187).

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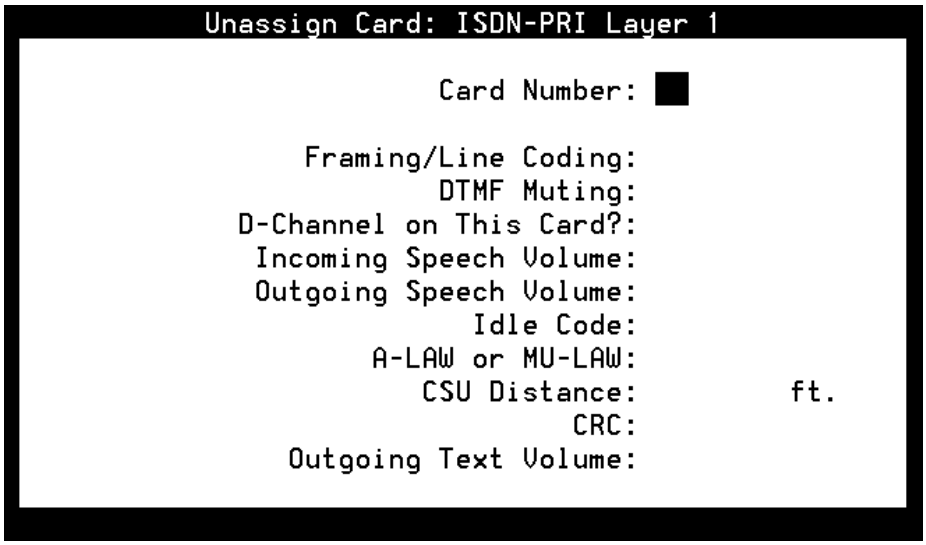
Figure 102. Unassign Card: ISDN-PRI Layer 1 Window



2 Enter the circuit card number in the `Card Number:` field, or press **F2** (Choices) to select from a menu.

The system displays the current parameter values for the selected circuit

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T1 for 4ESS Applications

The following options should be used when connecting a the system to a 4ESS switch via an E1/T1 line when using the E&M protocol.

Note: Some parameters on the switch side may require that you stop and restart the voice system once you have made changes. For example, when changing the frame format from D4ZCS to ESF, your PRI link to the switch may not come up if you have not stopped and started the voice system. See Stopping the Voice System on page 90 and Starting the Voice System on page 93 in Chapter 3, Voice System Administration, for the procedures.

- T1 E&M Options

  The following options should be set on the E1/T1 circuit card when it is connected to an AT&T 4ESS switch:

  ~ Wink Timing: 230 msec

  ~ Maximum Digits in Called Number: 4 is typical

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- Incoming/Outgoing Start Dialing: wink/wink
- Incoming/Outgoing Addressing: DTMF/DTMF

~ Timing Source: Looped Timed

- 4ESS Options

  The following information is requested by AT&T when provisioning the 4ESS switch for an E1/T1 connection:

  ~ TYPE CPE: DIGITAL PBX/ACD (WITH DS1 INTERFACE)

  - 4E NETWORK SWITCHED BASED SERVICES: MEG (Megacom), MEG8 (Megacom 800), or MULTIQUEST* as desired
  - ACCESS TYPE: T1
  - TRUNK OPERATION: The voice system always allows two-way traffic. If you expect only incoming calls, it is recommended that you select 1W/IN TOWARDS CPE. If you expect only outgoing calls, it is recommended that you select 1W/OUT FROM CPE. If you expect two-way traffic, select 2WAY.

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- START DIAL SIGNALING PROVIDED BY CPE: WK
- START DIAL SIGNALING PROVIDED TO CPE: WK (senderized operation)
- CPE DOES NOT SUPPORT DIFFERENT SIGNALING BIDIRECTIONALLY
- NUMBER OF DIGITS OUTPULSED TO CPE: This number should match the number selected in the “Maximum Digits in Called Number” E1/T1 option
- THE CPE CAN ACCEPT “O” AS THE FIRST DIGIT
- GLARE CONTROL: CPE WILL YIELD (WILL RELEASE)
- DIRECT INWARD DIAL (DID): N
- PBX ANSWER SUPERVISION WITHHELD: N
- NETWORK AUTHORIZATION CODES: N
- FRAME FORMAT: D4

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Changing Switch System Parameters

To change the switch system parameters:

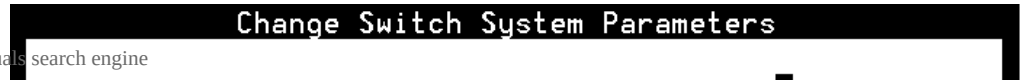
Note: You must stop the voice system before changing the switch system parameters.

1 Start at the Switch Interfaces menu (Figure 85 on page 143)and select:

```
> Change Switch System Parameters
```

The system displays the Change Switch System Parameters window (Figure 103).

Figure 103. Change Switch System Parameters



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2 Change the field values using the information in Table 15 and Table 16 on page 193.

Table 15. DTMF Tone Table

Keys on the Telephone Keypad			Corresponding DTMF Tone
1	2	3	A
4	5	6	B
7	8	9	C
*	0	#	D

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Table 16. Switch System Parameters

Field Name	Description	Valid Values
`Background Output Volume:`	This parameter specifies the adjustment to the output volume level in percent for the speech being played in the background.	A numeric entry for the percentage
`Hunt Group Method:`	This parameter specifies the order of hunting for idle channels.	Ascending (default), descending, or random Press **F2** (Choices) to select from a menu.

3 Press **F3** (Save).

The system displays the message that the switch system parameters

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Displaying Switch System Parameters

The Display Switch System Parameters window allows you to view the current setting for the switch system parameters.

To display the switch system parameters:

Note: You must stop the voice system before changing the switch system parameters.

1 Start at the Switch Interfaces menu (Figure 85 on page 143)and select:

```
> Display Switch System Parameters
```

The system displays the Display Switch System Parameters window (Figure 104 on page 195).

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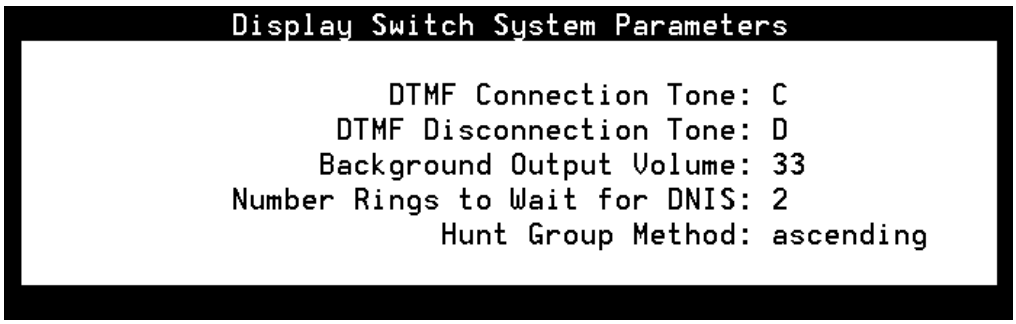
Figure 104. Display Switch System Parameters Window


Display Switch System Parameters
DTMF Connection Tone: C
DTMF Disconnection Tone: D
Background Output Volume: 33
Number Rings to Wait for DNIS: 2
Hunt Group Method: ascending

2 Press **F6** (Cancel) to return to the Switch Interfaces menu.

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5 Database Administration

Overview

This chapter provides information and procedures on how to administer ORACLE databases for use with the voice system. The information in this chapter is applicable *only* if you have the ORACLE 7 software installed on your system.

This chapter includes procedures for determining database space requirements, sizing the databases, and administering database tables. This chapter also reviews the SQL*PLUS software program, a tool used to access the ORACLE database.

Databases and the Voice System

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Call Data Tables

The base ORACLE software package creates the following database tables to store call data (Table 17).

Note: All these tables are created and owned by the sqlplus user *sti/sti*.

Table 17. ORACLE Call Data Tables

Table Name	Table Description
CCA	Call classification analysis data (contains one record for each attempted transfer or outdial).
CCASUM	Summary data for the CCA table (contains one record per hour, telephone number, and result code).
CALL[1]	Basic call information (contains one record per call).
SERVICE	Basic service information (contains one or more service records per call)

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Table 17. ORACLE Call Data Tables

Table Name	Table Description
EVENTS	Event data defined for a service (contains one record per event). There can be more than one EVENTS records per SERVICE record.
EVSUM	Summary data for the EVENTS table (contains one record per hour and event number).
TRASUM	Overall traffic summary data (contains one record per hour and channel).

2 of 2

1 The CALL and SERVICE tables replace the CDH table. Since more than one service (application) may be running during a call, there may be multiple entries in the SERVICE table related to a single entry in the CALL table. A database view named OLDCDH, consisting of fields from the CALL and SERVICE tables, has been created to represent the old CDH table.

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CCA Table

The CCA table contains the following information:

- START_TIME is a date field that specifies the starting time of each attempted transfer or outdialed call.
- PHONE_NUM is a variable-length character field that specifies the telephone number of an attempted transfer or outdialed call. This field can be up to 16 characters in length.
- RESULT_CODE is a variable-length character field that indicates the disposition of the call. This field can be 1 or more characters in length.

CCASUM Table

The CCASUM table contains the following information:

- PHONE_NUM is a variable-length character field that specifies the telephone number of an attempted transfer or outdialed call. This field can

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- SUM_TOT is a numeric field that indicates the number of calls transferred or outdialed in this period with this disposition and associated telephone number.
- RESULT_CODE is a variable-length character field that indicates the disposition of the call. This field can be 1 or more characters in length.

Note: Records are generated on a per-hour, per-telephone number, and per-result_code basis.

CALL Table

The CALL table contains the following information:

- CID is a numeric field that specifies a unique identification number that joins one CALL.CID to multiple SERVICE.CID.
- CHANNEL is a positive numeric field that specifies the channel number on which the call was running. This field can be up to 3 digits in length.

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SERVICE Table

The SERVICE table contains the following information:

- CID is a numeric field that specifies a non-unique identification number that joins multiple SERVICE.CID to one CALL.CID.

  Each call creates one or more SERVICE records, depending on the number of services used to handle the call. All SERVICE records associated with a call have the same SERVICE.CID as the CALL.CID in the CALL record. See Relationship Between the CALL, SERVICE, and EVENT Tables on page 204.

- SID is a numeric field that specifies a unique identification that joins one SERVICE.SID to multiple EVENTS.SID.
- SERVICE is a variable length character field that specifies the service (application) name. This field can be up to 16 characters in length.
- START_TIME is a date field that specifies the starting time of each service.

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CDHSUM Table

The CDHSUM table contains the following information:

- SUMID is a numeric field that specifies a unique identification number that joins CDHSUM.SUMID to EVSUM.SUMID.
- SERVICE is a variable-length character field that specifies the service (application) name. This field can be up to 16 characters in length.
- START_TIME is a date field that specifies the start of the hour (for example, 10:00:00).
- DURATION is a numeric field that specifies the sum of service run times during this hour in seconds.
- USAGE is a numeric field that indicates the total number of times the service was run for calls during a 1-hour period.

Note: Records are generated on a per-hour and a per-service basis.

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records associated with this call have the same SID number as the SID field of the corresponding SERVICE record.
See Relationship Between the CALL, SERVICE, and EVENT Tables on page 204 for more information.

EVSUM Table

The EVSUM table contains the following information:

- SUMID is a numeric field that specifies a unique identification number.

Note: The values in this field are related to the SUMID values in the CDHSUM table.

- EVENT_NUMBER is a numeric field that specifies the internal mapping between the event and an internal number.
- SUM_TOT is a numeric field that indicates the total number of occurrences for this event.

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Note: If the event type is a numeric, the value in SUM_TOT is the sum of

TRASUM Table

The TRASUM table contains the following information:

- START_TIME is a date field that specifies the start of hour (for example, 10:00:00).
- CHANNEL is a numeric field that indicates the channel number. This field can be up to 3 digits in length.
- CALL_TOT is a numeric field that specifies the total number of calls.
- DUR_TOT is a numeric field that specifies the total duration in seconds.

Note: Records are generated on a per-hour and a per-channel basis. No calls during this hour on this channel result in no record.

OLDCDH View

The OLDCDH view is an ORACLE database view provided to be compatible with the CDH table that is not supported in newer releases.

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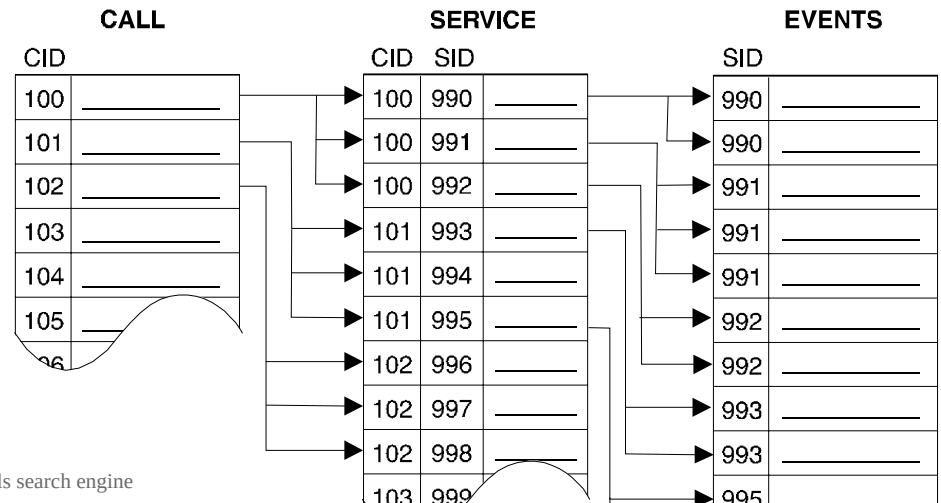
- Each record in the CALL table is linked to one or more records in the SERVICE table.
- Each record in the SERVICE table is linked to zero or more records in the EVENTS table.

Figure 105. Relationship Between the CALL, SERVICE and EVENTS Tables



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Resizing Call Data Tables

The sizes of the call data handling tables are defined in the **/oracle/dist/cdh/sql** file. Although the sizes are carefully engineered, it is possible that one or more of the tables should be increased to accommodate the heavier traffic on your system or the greater number of events defined in your applications. The most likely candidates for resizing are the EVENTS, SERVICE, and CALL tables, and their index tables.

To increase the size of a call data table:

1. At the `Console Login:` prompt, enter **root**

   The system prompts you for a password.

2. Enter your root password.

   The system displays the system prompt #.

3. Enter **cd /oracle/dist**

   The system changes to the **oracle/dist** directory.

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6 Write down this number.

7 Use the UNIX editor *vi* to modify the **cdh.sql** file as follows:

a Find the `create table xxx` statement block, where *xxx* is the table name (for example, CALL, SERVICE or EVENTS).

b Modify the statement `storage (initial 999k)` to a bigger number, where *999* is the current initial size for the table and *k* stands for kilobytes (1024 bytes).

Note: The new values specified should be at least twice as large as the current table size you wrote down in step 6. You may use the megabyte format, *99m*, where *m* is mbytes (1,000,000 bytes = mbyte). For example, to make the table have an initial size of 3 mbytes, modify the storage statement to read:

storage (initial 3m)

8 Enter **stop_vs**

The systems stops the voice system. See stop_vs in Appendix A,

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9 Enter **systblsav *file***

The system saves the table storage information, where *file* is a UNIX file or a device name where the data will be saved, such as, **/dev/rmt/c0s0**.

10 Enter **sqlplus \@ /oracle/dist/cdh.sql**

The system reinitializes the table or tables.

11 Enter **systblres *file***

The system restores the table storage information from the UNIX file or device name where it was saved in step 9, such as, **/dev/rmt/c0s0**.

12 Enter **start_vs**

The system restarts the voice system. See start_vs in Appendix A, Summary of Commands for more information about the **start_vs** command.

Verify Call Data Tables

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2 Enter your root password.

The system displays the system prompt #.

3 Enter **sqlplus sti/sti**

The system starts a sqlplus session.

4 Enter **describe CCA**

Note: If the table name is lowercase, do not use the **describe** command. Instead, use **desc** as described below:

desc *table_name*

The system displays the current definition of the CCA table, similar to the following:

```
Name                Null?     Type
----------          -----     -----
START_TIME          DATE
PHONE_NUM           VARCHAR2(16)
```

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Table Searches

Think of a database table as a book. If you want to find information on a subject, you must search the book to find it. However, checking the index first helps you to locate the information in the book much more quickly than paging through the book. The same is true for finding data in a database table.

Indexes and Key Fields

For large databases, you can use indexes on key fields to greatly reduce the time necessary to search the tables.

Indexed fields can be especially important in applications that require a “lookup” from a large table based on user input. This input generates a SQL statement for accessing the database that has the following form:

*SELECT * from “table_name” where “FIELD1” = ‘data’;*

If FIELD1 has an index created for it in the database, all records that match the criteria specified in the select statement are located much faster than if there is no index.

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A SQL statement may have more than one key field, as in the following example:

*SELECT * from “table_name” where “FIELD1” = ‘data1’ AND “FIELD2” = ‘data2’;*

In this example, FIELD1 and FIELD2 are key fields. Create an index for each of these fields to enhance system performance.

Unique Indexes

Unique indexes on fields enforce uniqueness of the data in that field across the entire table of records. For example, a field for which you might create a unique index is one that contains a social security number (SSN). A unique index on an SSN field ensures that only one record with a given SSN can exist in the table. Attempts to add records with that SSN will fail.

Use the following procedure to create a unique index on a field called *FIELD1* in a table called *“table_name”*:

1. At the `Console Login:` prompt, enter **root**

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4 Enter
create unique index *index_name* on *table_name* (“FIELD1”);

The system creates a unique index for FIELD1 in the table.

Non-Unique Indexes

Non-unique indexes do not prevent the same data from appearing in that field in several records in the same table. For example, if a field contains the area code of a telephone number and an index is created for that field, it must be a non-unique index since other records may require the same number in their area code field.

Use the following procedure to create non-unique indexes on fields called *FIELD1* and *FIELD2* in a table called *table_name*:

1 At the `Console Login:` prompt, enter **root**

The system prompts you for a password.

2 Enter your root password.

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5 Enter **create index *index_name* on *table_name* (“FIELD2”);**

The system creates a non-unique index for FIELD2 in the table.

Database Interface Process

A voice system application accesses the database tables through a single database interface process (DIP). A DIP is a software program that connects to the database and provides the only interface between the application and the database.

Database DIP Timeout

The voice system and remote database ORACLE connection is established when the voice system starts. After the connection is established, the voice system does not keep track of status changes on the remote machine. The connection between it and the voice system is dropped if the remote machine is turned off or rebooted. If the remote machine is shut down and rebooted

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the machine not operating, the machine operating slowly, an application query of a large non-indexed table, network congestion, and so on.

While the DIP is waiting for a response from the machine, the message queue of the DIP may back up. A full message queue (the current maximum is 255) may result in performance problems for the voice system.

To prevent this, the DIP is equipped with a timeout mechanism. By default, the DIP times out every 45 seconds while waiting for a response. After the timeout, the DIP deletes the messages currently queued and continues to wait for a response from the database. The DIP continues to time out every 45 seconds and to empty the message queue. After the default of 300 seconds, the DIP automatically respawns and reinitializes.

The 45-second and 300-second timeout values can be altered in **/vs/data/ldbdip.rc** *file*. This file is included with the generic package and contains the following default values:

```
FIRST_TMOUT=45
SECOND_TMOUT=300
```

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Database Cursors

An internal data structure called a *database cursor* is used to monitor the point from which the DIP is reading in a specific database table. One cursor is allocated for each read of each database table by each channel running a service that requires access to that database. The cursor remains assigned to that table until the service ends on the channel for which the cursor was allocated.

The number of cursors is tunable in the **/oracle/dbs/initA.ora** file (*open_cursors* is a tunable parameter). At least 500 cursors are supported. Once the limit of cursors is reached, database transactions do not complete successfully. That is, table reads may fail and inserts or updates may not occur.

Database Cursor Calculations

To ensure the integrity and consistency of the data in the database, you must keep this limiting factor in mind when you design your applications. Use the following formula to determine the number of database tables that may be accessed by an application with the voice system:

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- ~ read = the number of read table operations performed on different tables by applications (per channel)
- ~ cursor = the number of cursors involved in the read table

Note: Multiple reads of the same table use only one cursor.

The following are sample calculations using various configurations and numbers of read table operations.

- If you have a 24-channel system running an application that performs four read table operations on four different tables per channel, the calculation is:

  $24 \times 4 \times 1 = 96$

  Since 96 is less than 500, the database operations proceed properly.

- If you have a 36-channel system running an application that performs four read table operations on a single table per channel, the calculation is:

  $36 \times 1 \times 1 = 36$

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In this case, if all 48 channels are performing five read table operations, some database operations may fail because of the multiple read table operations on the same channels.

- An application developer wants to develop an application that executes six read table operations on six different tables per channel:

  $500 / (6 \times 1) = 83.33$

  Therefore, the application can run on as many as 80 channels before it encounters database access problems.

- An application developer wants to develop an application to run on 72 channels simultaneously:

  $500 / (72 \times 1) = 6.94$

  Therefore, the application can perform up to six read table operations on up to six different tables per channel before it encounters database access problems.

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To increase the database size:

Note: It is not necessary to stop the voice system while you are resizing the database.

1. At the `Console Login:` prompt, enter **root**

   The system prompts you for a password.

2. Enter your root password.

   The system displays the system prompt #.

3. Enter **/vs/bin/util/dbfrag**

   The system displays the number of free database blocks.

4. Multiply the number of free database blocks by 4 to get the actual number of free 512-byte blocks.

5. Enter **df /oracle**

   The system displays the number of free blocks available in the **/oracle** file

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8 Enter **connect internal**

9 Enter **alter tablespace system**

10 Enter **add datafile '/oracle/dbs/dbsA2.dbf'**

Note: The file name *dbsA2.dbf* is a recommended name. If this file already exists in this directory, use *dbsA3.dbf*

11 Enter **size *number***

where *number* is the number of bytes calculated in step 6 that you want to add to the database.

12 Enter **exit**

Note: We recommend that you use the above commands as written. However, if you are concerned about the **/oracle** file system size, substitute the **add datafile '/home2/dbsA2.dbf'** command for **add datafile '/oracle/dbs/dbsA2.dbf'** above.

13 Enter **/vs/bin/util/dbfrag**

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Decreasing the Database Storage Size

To minimize database storage and access problems, the voice system provides two ways to minimize the storage space required for call data:

- Reduce the amount of call data stored.
- Reduce the number of days for which data is stored.

Reducing the Amount of Call Data Stored

You can decrease the amount of database space needed by reducing the number of stored call data events. This reduction must be accomplished at the application design level. Unlike the technique to reduce the number of days data is stored, there are no system variables to modify. This minimization technique involves modifying every application that stores call data events to store fewer of them.

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The following is a sample **croncdh** file:

```
# Start the ORACLE DBMS

VSUTIL=/vs/bin/util
ORACLE_SID=A;export ORACLE_SID
ORACLE_HOME=‘/usr/lbin/dbhome $ORACLE_SID‘
PATH=$PATH:$ORACLE_HOME/bin;export PATH
ulimit 2113674
if /usr/lbin/orastat -s >/dev/null

then
:

else
 ulimit 2113674; ior w
fi

# perform the cron jobs

$VSUTIL/cdhsum
$VSUTIL/cdhdel
$VSUTIL/ccasum
```

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Changing the Data Storage Number of Days

Currently, the only report produced for the call classification data is the Call Classification Summary report. Therefore, saving zero days worth of call classification data saves database space without affecting the reports produced by the voice system. Storing zero days worth of data means that only the call classification data for the current day is available until the clean-up and summary programs run each night after midnight. The voice system always maintains the current day's data.

To change the number of data days, modify the following commands in the **croncdh** file, where *x* is the number of days of data to store:

```
$VSUTIL/cdhdel -x
$VSUTIL/ccadel -x
```

Note: If **cdhdel** and **ccadel** do not have any arguments, the default of 7 days is used, as illustrated in the sample **croncdh** file above.

To store 2 days worth of call detail data information, and 4 days of call classification data, modify the **croncdh** file as follows:

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```
if /usr/lbin/orastat -s >/dev/null
then
:

else
 ulimit 2113674; ior w
fi

# perform the cron jobs

$VSUTIL/cdhsum
$VSUTIL/cdhdel -2
$VSUTIL/ccasum
$VSUTIL/ccadel -4

# cleanout the unwanted ORACLE files
$VSUTIL/logdel
/vs/bin/util/dbcheck -w 15,20
```

Increasing the Shared Pool Size

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1. Check the message log for ORA-04031. The text portion of this message indicates there is not enough shared memory space.
2. Access the **/oracle/dbs/initA.ora** file.
3. Place a pound sign (#) in front of the value `shared_pool_size=3500000`.
4. Remove the pound sign (#) from the front of the value `shared_pool_size=6000000`.
5. Save and exit the file.
6. Enter **/oracle/bin/ior c** to stop the database system.
7. Enter **/oracle/bin/ior w** to start the database system.

Rollback Segment

A rollback segment is a storage buffer that records actions that can be undone under certain circumstances. The rollback segment grows as needed

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This section provides information on verifying and reducing the size of this rollback segment.

Verifying or Reducing the Size of the Rollback Segment

Note: The procedure to *reduce the size* of the R1 rollback segment requires that the voice system and the database system be stopped. If possible, avoid reducing the size of the rollback segment when call traffic is heavy. The procedure to verify the size of the rollback segment does not require that the voice system and the database system be stopped. Consequently, you may verify the size of the rollback segment at any time.

To verify or reduce the size of the rollback segment:

1. At the `Console Login:` prompt, enter **root**

   The system prompts you for a password.

2. Enter your root password

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3 Enter **/vs/bin/util/rb_init** to display the current size of the rollback segment, R1.

The system displays a message similar to the following:

```
Rollback segment R1 is currently 653312 bytes in size, would
you like to reduce the size of this rollback segment? (y/n)
```

The original size of the rollback segment was set to 653312 bytes. If the current size is close to this number, or if it is less than one-fourth of your total database size, you do not need to reduce the size of the rollback segment.

To terminate this procedure, go to step 4.

To continue with this procedure and reduce the size of the rollback segment, go to step 5.

4 To terminate the **rb_init** command without reducing the size of the rollback segment, enter **n**

The system returns to the system prompt #. You have completed this

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6 Enter **y** to shut down the voice system and continue with the procedure to reduce the size of the rollback segment.

The system displays the following message if the database system is running:

```
The database system is running. Is it OK to shutdown the
database? (y/n)
```

7 Enter **y**

The system stops the database system and executes the **rb_init** command.

When the **rb_init** command is finished, the system displays the following message:

```
Would you like to restart the voice system? (y/n)
```

8 Enter **y** to restart the voice system, or enter **n** to wait to start the voice system.

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Voice System Database Administration

To access the Database Administration window:

1. At the `Console Login:` prompt, enter **root**

   The system prompts you for a password.

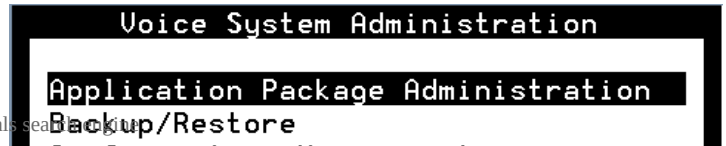
2. Enter your root password.

   The system displays the system prompt #.

3. Enter **cvis_menu**

   The system displays the Voice System Administration menu (Figure 106).

Figure 106. Voice System Administration Menu



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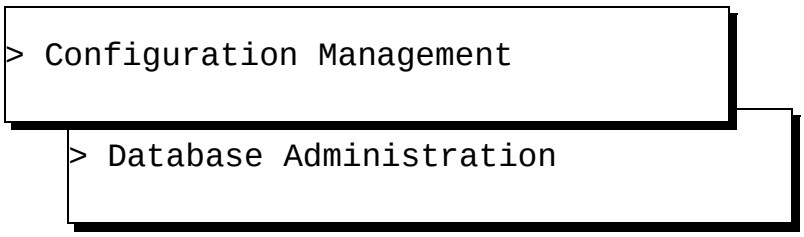
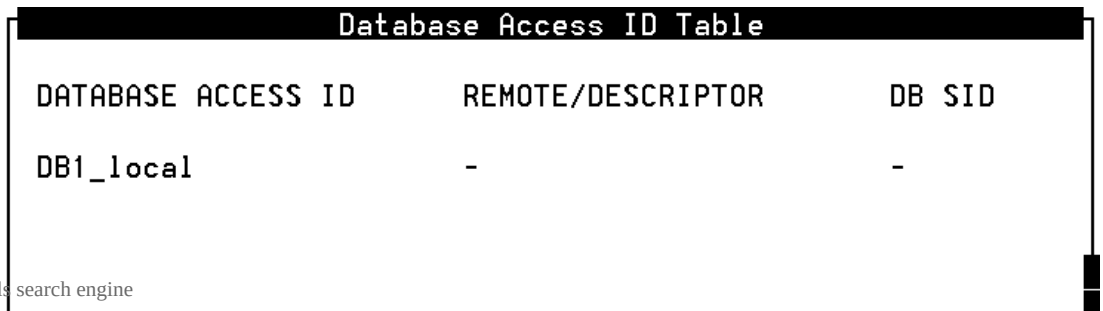
4 Select:



The system displays the Database Access ID Table window (Figure 107).

Figure 107. Database Access ID Table Window



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Database Access ID Table Window

The Database Access ID Table window displays currently recognized database IDs. Use the Database Access ID Table window to perform the following tasks:

- Add a local or remote database access ID
- Remove a local or remote database access ID

Table 18 describes each field in the Database Access ID Table window.

Table 18. Field Descriptions for the Database Access ID Table Window

Field Name	Description
`Database Access ID`	List of database access IDs, each representing an established ORACLE database connection to the system. See Database Access IDs on page 231 for more information.
`Remote Machine`[1]	Remote machine name.

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Database Access IDs

Each ID listed in the Database Access ID Table window represents an established local or remote connection to an ORACLE database. This connection is used by the voice system's applications to access a customer's database tables. The database ID, then, represents each local or remote database to the voice system.

An application can access multiple database tables in a local database (that is, a database that resides on the voice system's hard disk). However, you can improve the access performance by adding multiple database access IDs to that local database to split the access evenly between the multiple database access IDs.

Adding a Local Database Access ID

To add a *local* database access ID:

1. Start at Database Access ID Table window (Figure 107 on page 229).
2. Press **F8** (Chg–Keys).

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Figure 108. Add A Database Access ID Menu

4 Select:

```
> Add a Local Database Access ID
```

The system displays the Add a Local Database Access ID window (Figure 109).

Figure 109. Add a Local Database Access ID Window

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6 Press **F3** (Save) to save the database access ID and exit the window. The Add a Database Access ID menu remains active, allowing you to add other database access IDs, if desired.

7 If you are finished adding database access IDs, press **F6** (Cancel) twice to return to the Configuration Management menu.

8 Stop and start the voice system. See Stopping the Voice System on page 90 and Starting the Voice System on page 93 in Chapter 3, Voice System Administration, for the procedures.

The system establishes the local database connections.

Adding a Remote Database Access ID Using SQL*NET V2

You must have the SQL*NET TCP/IP installed on your system to use SQL*NET V2 for remote database access.

See “Installing the Oracle SQL*NET TCP/IP Package,” in Chapter 7, “Installing the Optional Feature Software,” in *UCS 1000 R4.2 Maintenance*

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- The **$ORACLE_HOME/network/admin/tnsnames.ora** configuration file on the UCS 1000 R4.2 has been updated to provide system information for the system. The system software automatically attempts to update the existing **tnsnames.ora** file (or to create a new file if none exists), but manual alterations are sometimes necessary. For assistance with this requirement, see the database administrator.

See “Configuring the TNS Listener: LISTENER.ORA” and “Identifying the Servers: TNSNAMES.ORA” in the *ORACLE Server Administrator’s Guide Release 7.3*, for more information on these configuration files.

To add a remote database access ID using SQL*NET V2:

1. Start at Database Access ID Table window (Figure 107 on page 229).
2. Press **F8** (Chg–Keys).

   The system displays the alternate set of function keys.
3. Press **F1** (Add).

   The system displays the Add a Database Access ID menu (Figure 110)

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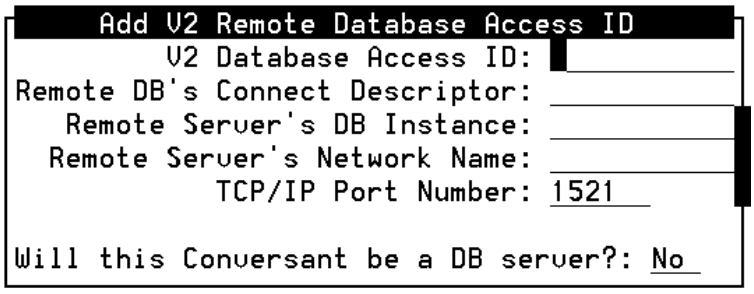
4 Select:

```
> Add a SQL*Net V2 Remote Database Access ID
```

The system displays the Add V2 Remote Database ID window (Figure 111).

Figure 111. Add V2 Remote Database Access ID Window


Add V2 Remote Database Access ID
V2 Database Access ID:
Remote DB's Connect Descriptor:
Remote Server's DB Instance:
Remote Server's Network Name:
TCP/IP Port Number: 1521
Will this Conversant be a DB server?: No

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5 Complete the fields in this window using the information in Table 19.

Table 19. Field Descriptions for the Add V2 Remote Database Access ID Window

Field Name	Description	Valid Values
V2 Database Access ID:	This field specifies the name by which you want to refer to this connection.	—
Remote DB's Connect Descriptor:	This field specifies the database instance on the remote database server to which you want to connect. This connect descriptor is put into the **/oracle/network/admin/tnsnames.ora** file if it is not already in that file.	—
Remote Server's DB Instance:	This field specifies the name of the ORACLE database instance on the remote database server. This field is also known as the ORACLE SID.	This name must match the corresponding ORACLE SID on the server system. Contact the server's

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Table 19. Field Descriptions for the Add V2 Remote Database Access ID Window

Field Name	Description	Valid Values
`Remote Server's Network Name:`	This field specifies the network name or TCP/IP address of the remote database server. If the network name is entered, it must already exist in the local **/etc/hosts** file.	Contact the network administrator for this name or TCP/IP address.
`TCP/IP Port Number:`	This field contains the TCP/IP port number.	This port number must match the one on the remote database server. Contact the server's database administrator for this port number.

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Table 19. Field Descriptions for the Add V2 Remote Database Access ID Window

Field Name	Description	Valid Values
`Will this CONVERSANT be a DB server?`	This field indicates whether this is a database server. **Note:** It is strongly recommended that the local system not be used as a database server due to performance considerations.	Yes or No If No, the system can only be a client to a remote database server. If Yes, the system can be both a client and a database server. Also, if Yes, the system sets up a listener process and a connect descriptor entry is created in the **tnsnames.ora** file for this system.

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8 Stop and start the voice system. See Stopping the Voice System on page 90 and Starting the Voice System on page 93 in Chapter 3, Voice System Administration, for the procedures.

Completing ORACLE Environment Setup if Server is Not a UCS 1000 R4.2

If the database server is a UNIX-based system running ORACLE V7 but not a UCS 1000 R4.2 system, you must perform the following procedures to complete the ORACLE environment setup:

Note: This procedure assumes the following:

- The network is a TCP/IP local area network and consists of a single server and any number of clients (UCS 1000 R4.2 systems).
- The server runs a single listener process to permit access to the server's database.
- The ora7sql package is installed on all of the clients

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2 Start the listener process.

3 Provide the server's network name and database instance name (ORACLE_SID) to each UCS 1000 R4.2 client system.

Accessing a Remote Database Using PRO*C or SQL*PLUS

The following are application development issues related to accessing a remote database using PRO*C or SQL*PLUS programs.

Setting the Connect Descriptor

If you are using PRO*C or SQL*PLUS with an IRAPI application, you must change or verify the correct form of the connect string. The database interface assigns the node name of the system with the remote database as the connect string. The connect string should be in the form "*remote_system*" with the name of the system contained in quotes. For example, if the remote system name is cop3, the connect string must be "cop3".

Setting

If you are using PRO*C, you must set the environment variables

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Shell Wrapper Approach

Perform the following:

1. Compile the original source file that communicates with the database along with all the other source files.
2. Rename the executable file using the move command, but keep it in the same directory.
3. Using your favorite editor, edit a file with the same name as the original executable file.
4. Enter the following on the first line:

   ORACLE_SID=*ORACLE_SID_name*;export ORACLE_SID

   where *ORACLE_SID_name* is the name of the instance of the ORACLE database on the server.
5. Enter the following on the second and third lines:

   ORACLE_HOME='/usr/lbin/dbhome $ORACLE_SID';export

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7 Change the mode of shell file with the original name to *rwxr_xr_x*.

8 Add the original executable file name along with all the other executable files to **/etc/inittab** file as before using the same tools as before.

The following example is used to illustrate these steps. The executable file that communicates with the database is called **get_pin_uac**. The name of the instance of the ORACLE database is “A”.

1 Compile the **get_pin_uac** executable file along with all the other executable files as before.

2 Enter **mv get_pin_uac getPinUac** in the **/home/gar/irapi** directory.

3 In the **/home/gar/irapi** directory, enter **vi get_pin_uac**

4 Enter the following first line to the file:

ORACLE_SID=A;export ORACLE_SID

5 Add the following second and third line to the file:

ORACLE_HOME=‘/usr/lbin/dbhome $ORACLE_SID‘;export

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8 Place the **/home/gar/irapi/get_pin_uac** entry along with all the other executable files in the **/etc/inittab** file as before using the same tools as before.

putenv Approach

The following describes the putenv approach. The putenv function call permits the developer to directly place the ORACLE_SID and the ORACLE_HOME environmental shell variables into a Pro*C program. Perform the following:

1 Using an editor, open the Pro*C source file for editing.

2 Add the following line at the top of the source file:

#include <stdlib.h>

3 Near the beginning of main, add the following two lines of code:

putenv ("ORACLE_SID=<*ORACLE_SID_name*>");

putenv ("ORACLE_HOME=<*ORACLE_HOME_name*>");

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4 Recompile this source code file along with all the source files that make up the custom software.

The following example is used to illustrate these steps. The name of the instance of the ORACLE database is “A”. The name of the ORACLE_HOME directory is ***/oracle***.

```
/* start of header files */
...
#include <stdlib.h>
...
/* end of header files */
...
...
main (argc,argv)
int argc;
char *argv[];
{
    /* start of local variables */
    ...
    /* end of local variables */
    /* start of executable code */
```

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Removing a Database Access ID

The Remove a Database Access ID window allows you to remove one or more existing database access IDs, thereby dropping the connection to the associated ORACLE database.

CAUTION:
When you remove a remote database access ID, make sure that no applications use that database access ID. If an application uses an ID that has been removed, the application fails when it tries to access data stored in that database.

1. Start at Database Access ID Table window (Figure 107 on page 229).
2. Press **F8** (Chg–Keys).

   The system displays the alternate set of function keys.
3. Press **F2** (Remove).

   The system displays the Remove a Database Access ID window (Figure

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Figure 112. Remove a Database Access ID Window

4 Enter the access ID of the database you want to remove in the `Database Access ID:` field, or press **F2** (Choices) to select from a menu.

5 Press **F3** (Save).

The system saves the ID of the remote database connection to be deleted.

6 Stop and start the voice system. See Stopping the Voice System on page 90 and Starting the Voice System on page 93 in Chapter 3, Voice System Administration, for the procedures.

The system removes the database connection.

SQL*PLUS Database Administration

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CAUTION:
Do not alter any data, schema, logins, or passwords using SQL*PLUS. Doing so may corrupt the voice system and result in the need for maintenance. The ORACLE right-to-use license is restricted solely to UCS 1000 R4.2 applications, that is, not covered under the warranty.

If you use SQL*PLUS to drop a table or change a table schema, you must reverify and reinstall the application that refers to the table. The applications might not be able to communicate with the database correctly if you fail to reverify and reinstall them.

Monitoring the Database

See the *ORACLE Server Administrator's Guide* for information on commands and procedures used to monitor the database.

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The dbcheck Command

The **dbcheck** command checks space usage and rollback segment growth.

dbcheck Command Options

The **dbcheck** command has three different options:

- **-i** installs **cron** entries and error messages. The **cron** job can be placed in either the **root cron** file or added to the end of **/vs/bin/util/croncdh** job that runs once a day. The *-i* option also asks if you want new error messages added to the **att** errors file along with explanations used with the **explain** command. This installation only needs to be run if you want the warnings to show up in the system message log or you want to schedule automatic checking at regular intervals.
- **-r** removes any cron entry set up by the *-i* option
- **[-w n[,m]][-s][-e][-m user[~user...]]** checks database space against user-set thresholds. The following occurs:
  - ~ Free space is checked against the user set threshold *n*, 15% default
  - ~ Rollback segment growth is checked against the user set threshold *m*,

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The command, by default, sends warning messages to the error log indicating a threshold was exceeded (the *-i* option must be run first). The *-e* option disables entries from going into the log file. The *-s* option prints the warning messages to standard output. The *-m* user option allows for the messages to be mailed to *user*. Multiple users can be sent the mail by separating the user names with a tilde (~). Following are sample outputs:

(Output to error log when less than 13% available or more than 23% used by rollback)

```
# dbcheck -w13,23
```

dbcheck Command Output

The **dbcheck** program returns the following values:

- 0 — Success (no limits exceeded)
- 1 — Threshold exceeded
- 2 — Processing error

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dbfree Command Options

The **-h** option removes the column headers.

The dbfree Command Output

The **dbfree** program returns the following values:

- 0 — Success
- 1 — Processing error

The dbfrag Command

The **dbfrag** command is a shell script that reports on database allocation, usage, and fragmentation. The block size reported is in ORACLE blocks (2048 bytes). This command is useful to get a quick check on database usage and provides a shell interface into some key ORACLE statistics. This command only reports on information in the SYSTEM tablespace.

The dbfrag Command Options

The dbfrag command has two options:

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The dbfrag Command Output

The **dbfrag** program returns the following values:

- 0 - Success
- 1 - Processing error

The dbused Command

The **dbused** command is a shell script that displays the amount of space used by each object for a given user. Objects are tables, indexes, clusters, rollback, and cache. The default user is sti/sti.

dbused Command Options

The **dbused** command has three options:

- **-h** prints the listing without a header. This option is useful if you want to parse the output to select a specific field.
- **-s** produces only summary information grouped by objects.
- **-u *uid/passwd*** specifies the ORACLE user id and password (sti/sti is

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Database Trace Files

ORACLE creates a trace file in the **/oracle/rdbms/log** directory each time the system is rebooted. These trace files are not automatically removed by ORACLE and must be removed by the user or administrator if the files are no longer wanted. In addition, ORACLE creates a log file **/oracle/tcp/log/orasrv.log** that contains all of the remote login information that is automatically created and appended by ORACLE. This log file is not automatically removed by ORACLE and may be removed or truncated by the user or administrator.

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6 Peripheral Administration

Overview

This chapter provides the information and procedures needed to configure and administer the peripheral equipment connected to your voice system, namely modems, printers, and remote terminals.

Accessing the Unix Management Menu

To access the Unix Management menu:

1 At the `Console Login:` prompt, enter **root**

The system prompts you for a password.

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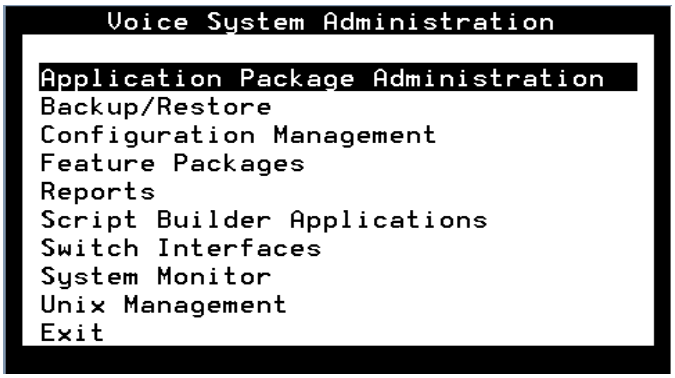
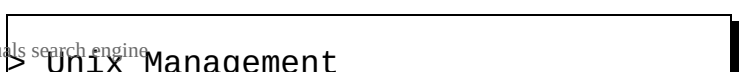
3 Enter **cvis_menu**

The system displays the Voice System Administration menu (Figure 113).

Figure 113. Voice System Administration Menu



4 Select:



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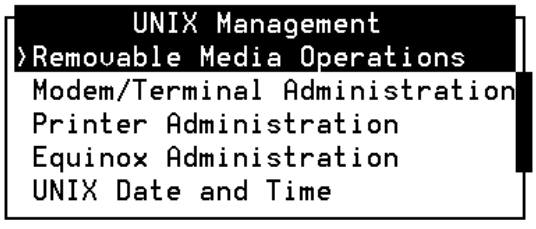
The system displays the Unix Management menu (Figure 114).

Figure 114. Unix Management Menu



The procedures in this chapter detail administration for modems, terminals, and printers.

The other menu options in the UNIX Management menu are discussed in Chapter 7, Common Administration .

Modem Administration

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Installing the Modem

To install the modem:

1 Physically connect the modem to the system.

See “Connecting the 3820 Modem to the Platform,” in Chapter 4, “Completing System Installation," in *UCS 1000 R4.2 New System Installation*, 585-313-127, for the procedure to physically connect the modem.

Configuring the Modem

In order for the 3820 or 3920 plus modem to work properly with the voice system, you must configure the modem using one of the two following methods:

- Configure the modem via its control panel after connecting it to the COM port on the hardware platform. See Configuring the Modem Using the Modem Control Panel on page 257 for more information.

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Configuring the Modem Using the Modem Control Panel

The 3820 and 3920 Plus modems have a Diagnostic Control Panel (DCP) that is the user interface to the modem. Use the procedures below to configure the 3820 modem via its control panel:

Activate the Unix Dial Default Factory Configuration

To activate the UNIX Dial default factory setting:

1. Turn the modem off and then back on.
2. Press ◄ or ► on the modem to display `Configure`.
3. Press the function key under `Configure` (**F1** or **F2**).

   Modem response:

   `Ld EditArea frm.`
4. Press ◄ or ► to display `Factory`.
5. Press **F1** to display the factory preset configuration.

   Modem response:

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7 Press **F2** (Select).

Modem response:

```
Choose Function
Edit and Save.
```

8 Press **F3** (Save).

Modem response:

```
Sav EditArea to
Active.
```

9 Press **F1** (Save).

- 3820 modem response:

  ```
  Command Complete
  ```

- 3920 Plus modem response after a power reset.

  ```
  Idle: 288
  ```

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Setting the Async DTE Rate

To set the Async DTE rate to the required speed:

1. Press ◄ or ► on the modem to display `Configure`.
2. Press the function key under `Configure` (**F1** or **F2**).

   Modem response:

   `Ld EditArea frm.`
3. Press ◄ or ► to display `Active`.
4. Press **F1** (Save).

   Modem response:

   `Choose Function`

   `Edit and Save`
5. Press **F1** (Edit).

   Modem response:

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7 Press **F1** (Next) to display `Async DTE Rate`.

8 Press ◄ or ► to display the baud.

9 Press **F2** (Select).

The LCD displays the baud.

10 Continue with the next procedure, Setting the DTR Action and DSR Control to Standard RS-232 on the Modem on page 260. Do *not* return to the top-level menu.

Setting the DTR Action and DSR Control to Standard RS-232 on the Modem

To set the DTR action to standard RS-232 on the modem:

1 Press **F1** (Next), more than once if necessary, to display `DTR Action`.

2 Press ◄ or ► to display `Stndrd_RS-232`.

3 Press **F2** (Select).

4 Press **F1** (Next) to display `DSR Control`.

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7 Press the single ▲.

Modem response:

```
Edit StrapGroup
```

8 Press ◄ or ► to display `DTE Dialer`.

9 Press **F1** (Edit).

Modem response:

```
DTE Dialer Type
```

10 Press **F1** (Next) to display `AT Escape Char`.

11 Use ◄ or ► and **F2** (Select) to adjust the number to 128 ASCII.

12 Press ▲.

Modem response:

```
Edit StrapGroup
```

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13 Press ◄ or ► to display `Dial Line`.

16 Press **F2** (Select).

The LCD displays the baud.

17 Press the single ▲.

Modem response:

```
Edit StrapGroup
```

18 Continue with the next procedure, Setting the Error Control Mode to Buffer Mode on the 3820 Modem on page 262. Do *not* return to the top-level menu.

Setting the Error Control Mode to Buffer Mode on the 3820 Modem

To set the error control mode to buffer mode:

1 Press ◄ or ► to display `V42/MNP/Buffer`.

2 Press **F1** (Edit).

Modem response:

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6 Press ◄ or ► to display `CTS_to_DTE`.

7 Press **F2** (Select).

8 Press ▲.

Modem response:

```
Edit StrapGroup
```

9 Press ▲.

Modem response:

```
Choose Function
Edit and Save
```

10 Press **F3** (Save).

Modem response:

```
Sav EditArea to
Active
```

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Configuring the Modem Using a Terminal

To configure the modem terminal:

1. Connect a terminal to the 3820 modem.

Note: See the documentation provided with the terminal for connection instructions.

2. Verify that the terminal is acting as a DTE.
3. Set the terminal line to 8 bits, no parity, and 1 stop bit.
4. Set the baud of the terminal line to the required modem speed.
5. Enter **AT** from the terminal.

   Modem response:

   OK

Note: If the modem does not display OK, the modem is unable to accept AT commands from the terminal. Check the connection and the terminal setup.

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- ~ 6 = 2400
- ~ 7 = 200, V.22
- ~ 8 =1200, 212A
- ~ 20 = 19200

For example, to set the 3820 modem to use COM1, where the baud is 19200, enter **20** as the *dial line rate* as shown below:

AT&TF3L0&D2&S1\N0\Q3S41=20S2=128&W0

Modem response:

OK

7 Disconnect the terminal.

8 Connect the modem to COM port 1.

Note: COM port 2 (COM2) is reserved for the TAM.

The system activates the RTS, CTS, and LSD indicators.

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Administering the Modem

For the 3820 or 3920 plus modem to work properly with the voice system, you must administer the voice system to recognize the modem port.

To administer the voice system to recognize the modem:

1. At the `Console Login:` prompt, enter **root**

   The system prompts you for a password.

2. Enter your root password.

   The system displays the system prompt #.

3. Enter **cvis_menu**

4. Select

```
> UNIX Management
```

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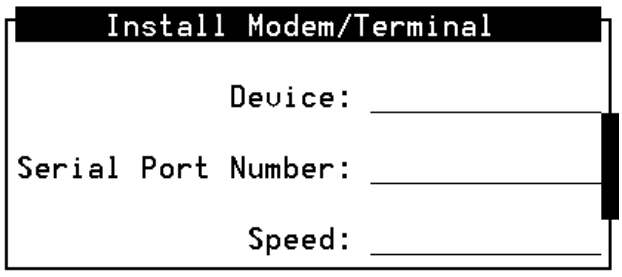
The system displays the Install Modem/Terminal window (Figure 115).

Figure 115. Install Modem/Terminal Window



5 Enter **modem** in the `Device:` field.

6 Press **F2** (Choices) to display a list of valid port numbers for the `Serial Port Number:` field.

a Select COM port 1, **/dev/tty00**

Note: COM port 2 (COM2) is reserved for the TAM.

7 Enter **19200** in the `Speed:` field.

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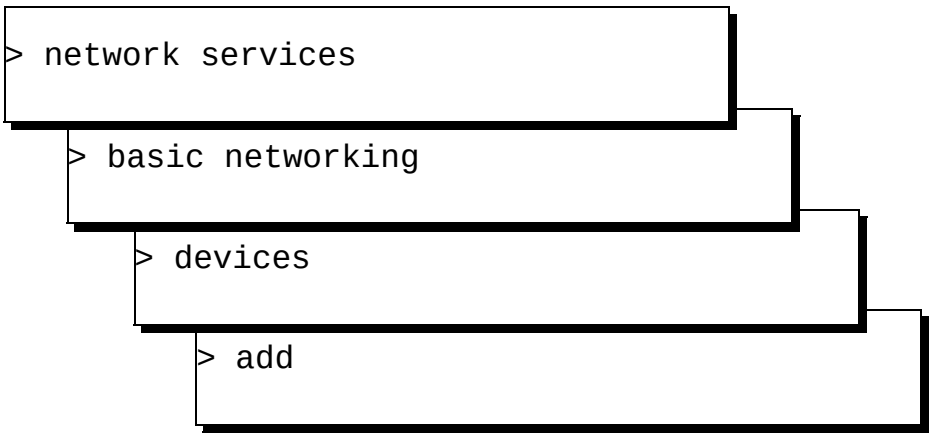
Setting Up UnixWare to Use a Modem for Outgoing Calls

To configure UnixWare for a modem:

1 Start at the UNIX System V Administration menu (Figure 17 on page 24) and select:



The system displays the Adds a Device for Use by Basic Networking window (Figure 116).

Figure 116: Adds a Device for Use by Basic Networking Window

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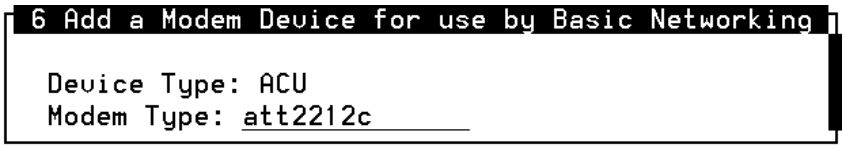
3 Press **F3** (Save).

The system displays the Add a Modem Device for use by Basic Networking (1) window (Figure 117).

Figure 117. Add a Modem Device for use by Basic Networking (1) Window



4 Enter **ACU** in the `Device Type:` field.

5 Enter the appropriate modem in the `Modem Type:` field, or press **F2** (Choices) to select from a menu. If your modem uses the “atdt” command set, select one of the Hayes modems.

6 Press **F3** (Save).

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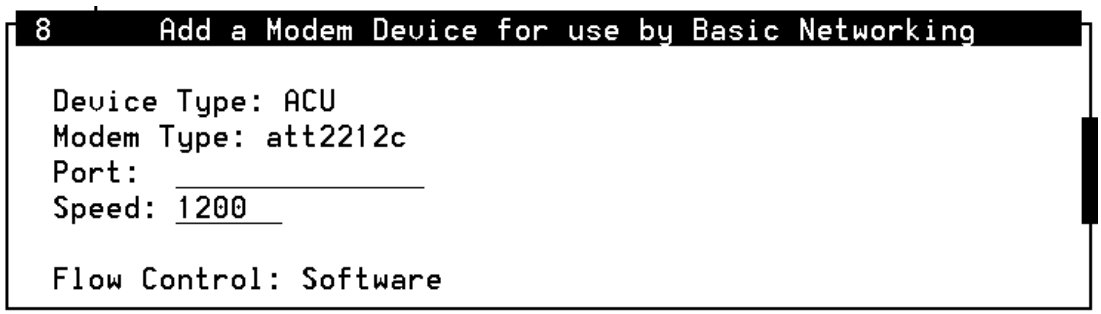
The system displays the Add a Modem Device for use by Basic Networking (2) window (Figure 118) with several of the fields already filled in.

Figure 118. Add a Modem Device for use by Basic Networking (2) Window



7 Enter **/dev/tty00** for COM port 1.

Note: COM port 2 (COM2) is reserved for the TAM.

8 Enter **19200** in the Speed: field, or accept the default.

9 Press **F3** (Save).

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Setting Up UnixWare to Use a Modem for Incoming Calls

To configure UnixWare for a modem that can process incoming calls:

1 Start at the UNIX System V Administration menu (Figure 17 on page 24) and select:

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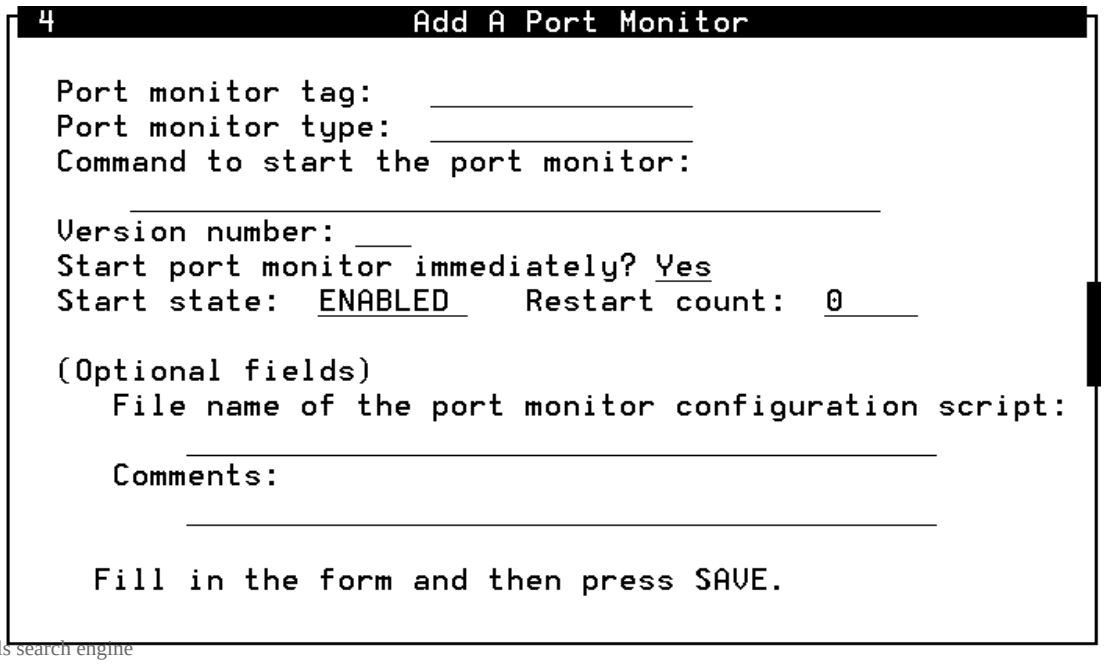
The system displays the Add A Port Monitor window (Figure 119).

Figure 119. Add A Port Monitor Window


4 Add A Port Monitor
Port monitor tag:
Port monitor type:
Command to start the port monitor:
Version number:
Start port monitor immediately? Yes
Start state: ENABLED Restart count: 0
(Optional fields)
File name of the port monitor configuration script:
Comments:
Fill in the form and then press SAVE.

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6 Enter **Yes** in the `Start port monitor immediately:` field.

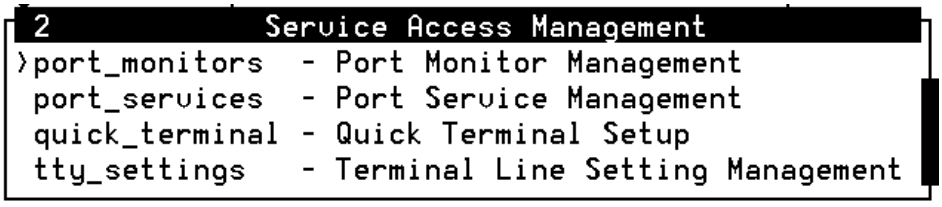
7 Enter **Enabled** in the `Start state:` field.

8 Enter **0** in the `Restart count:` field.

9 Press **F3** (Save).

The system displays the Service Access Management menu (Figure 120).

Figure 120. Service Access Management Menu


2 Service Access Management
>port_monitors - Port Monitor Management
port_services - Port Service Management
quick_terminal - Quick Terminal Setup
tty_settings - Terminal Line Setting Management

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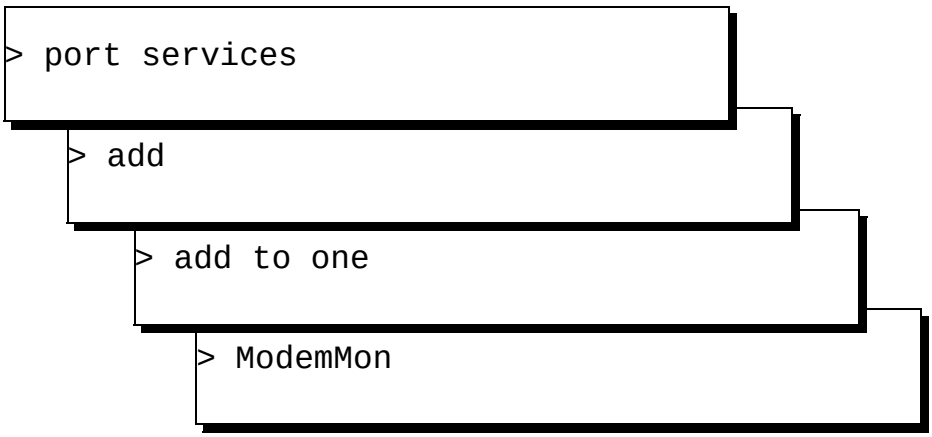
10 Select:



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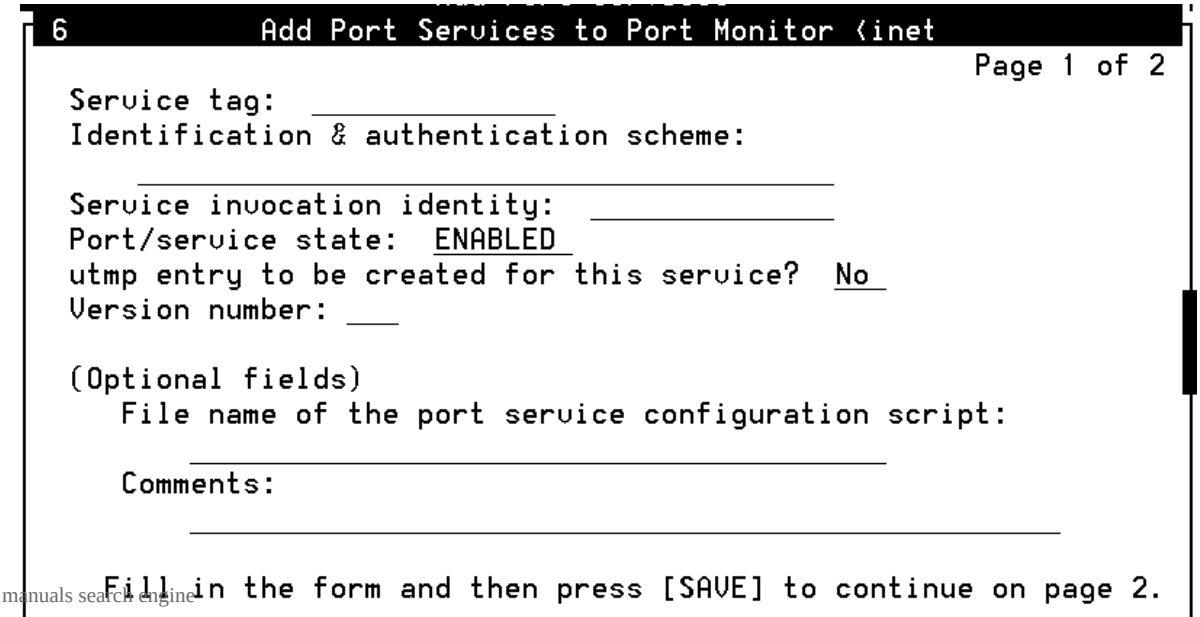
The system displays the Add Port Services to Port Monitor window (Figure 121).

Figure 121. Add Port Services to Port Monitor Window


6 Add Port Services to Port Monitor (inet
Page 1 of 2
Service tag:
Identification & authentication scheme:
Service invocation identity:
Port/service state: ENABLED
utmp entry to be created for this service? No
Version number:
(Optional fields)
File name of the port service configuration script:
Comments:
Fill in the form and then press [SAVE] to continue on page 2.

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15 Enter **YES** in the `utmp entry to be created for this service:` field.

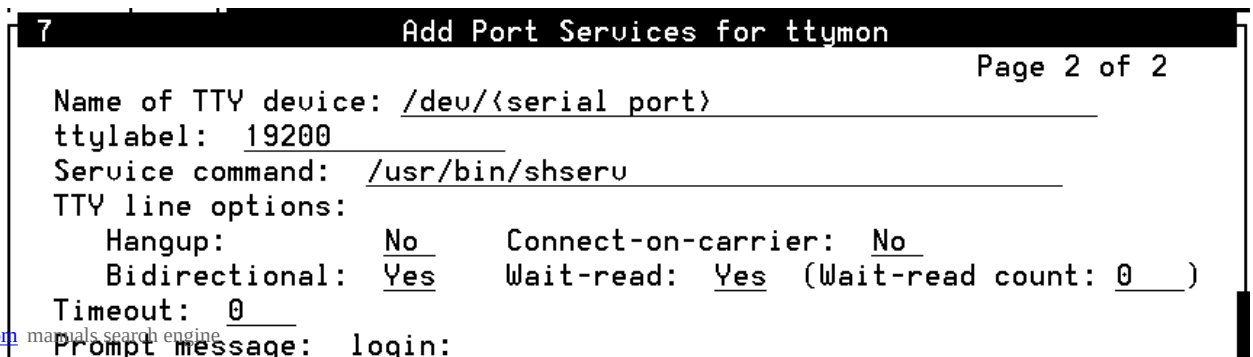
16 Enter **2** in the `Version number:` field.

Leave the remaining fields blank.

17 Press **F3** (Save).

The system displays the Add Port Services for ttymon window (Figure 122).

Figure 122. Add Port Services for ttymon Window



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18 Enter **/dev/tty00** in the `Name of TTY device:` field.

19 Enter **19200** in the `ttylabel:` field.

20 Enter **/usr/bin/shserv** in the `Service command:` field.

21 Enter **No** in the `Hangup:` field.

22 Enter **No** in the `Connect-in-Carrier:` field.

23 Enter **Yes** in the `Bidirectional:` field.

24 Enter **No** in the `Wait-read Count:` field.

25 Enter **0** in the `Timeout:` field.

26 Enter **login:** in the `Prompt Message:` field.

27 Enter **ldterm** in the `Modules to be Pushed:` field.

28 Leave the `Disabled Response Message:` field blank.

29 Press **F3** (Save).

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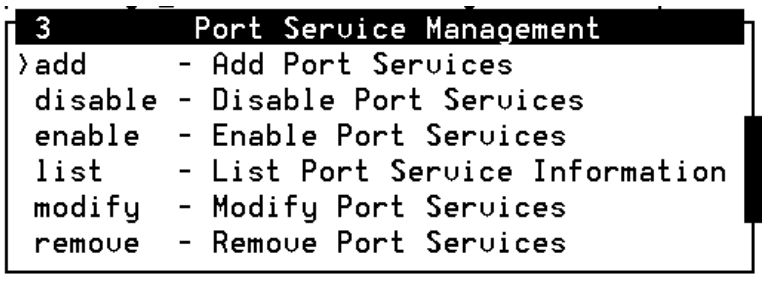
The system returns to the Port Service Management menu (Figure 123).

Figure 123. Port Service Management Menu


3 Port Service Management
)add - Add Port Services
disable - Disable Port Services
enable - Enable Port Services
list - List Port Service Information
modify - Modify Port Services
remove - Remove Port Services

31 Press **F6** (Cancel) repeatedly to return to the UNIX System V Administration menu.

Printer Administration

This section describes how to configure and administer the printer for use with the voice system.

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Configuring the Printer on the Voice System

Lucent Technologies supports the standard parallel printers that have the UnixWare 2.1.7 driver. Contact your field support personnel if you want to connect a serial printer to the system.

To configure a local parallel printer:

1. At the `Console Login:` prompt, enter **root**

   The system prompts you for a password.

2. Enter your root password.

   The system displays the system prompt #.

3. Enter **cvis_mainmenu**

   The system displays the administration main menu (Figure 124).

Figure 124. Administration Main Menu

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4 Select:

```
> UNIX System Administration
    > printers
        > printers
            > add
```

The system displays the Add a New Printer window (Figure 125).

Figure 125. Add a New Printer Window

```
4                          Add a New Printer

Printer name: _____________
System name: bop13_________
```

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5 Enter the name of the new printer in the `Printer Name:` field.

6 Enter the local system name in the `System Name:` field.

7 Enter **oki-320** in the `Printer Type:` field.

8 Enter **none** in the `Similar printer to use for defaults:` field.

9 Enter **no** in the `Do you want to use standard configurations? (eg alerts, banners):` field.

10 Enter **yes** in the `Do you want to use standard port settings? (eg baud rate, parity):` field.

11 Enter **no** in the `Is this a Dial-up Printer?` field.

Note: If you enter **yes,** the system displays a `Dial-info:` field.

12 Enter **/dev/lp0** in the `Device or Address:` field.

13 Press **F3** (Save).

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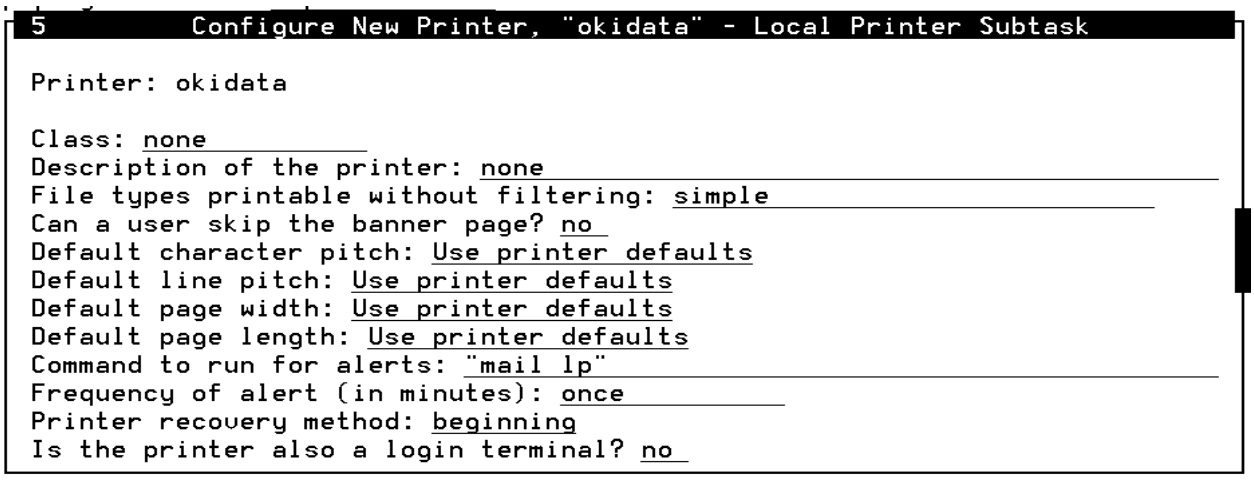
The system displays the Configure New Printer window (Figure 126).

Figure 126. Configure New Printer Window


5 Configure New Printer, "okidata" - Local Printer Subtask
Printer: okidata
Class: none
Description of the printer: none
File types printable without filtering: simple
Can a user skip the banner page? no
Default character pitch: Use printer defaults
Default line pitch: Use printer defaults
Default page width: Use printer defaults
Default page length: Use printer defaults
Command to run for alerts: "mail lp"
Frequency of alert (in minutes): once
Printer recovery method: beginning
Is the printer also a login terminal? no

14 Enter **none** in the `Class:` field.

15 Enter **printer one** in the `Description of the printer:` field.

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18 Enter **Use printer defaults** in the following fields:

- `Default char. pitch:`
- `Default line pitch:`
- `Default page width:`
- `Default page length:`

19 Enter **mail lp** in the `Command to run for alerts:` field.

20 Enter **once** in the `Frequency of alert (in minutes):` field.

21 Enter **beginning** in the `Printer recovery method:` field.

22 Enter **no** in the `Is Printer also a login terminal:` field.

23 Press **F3** (Save).

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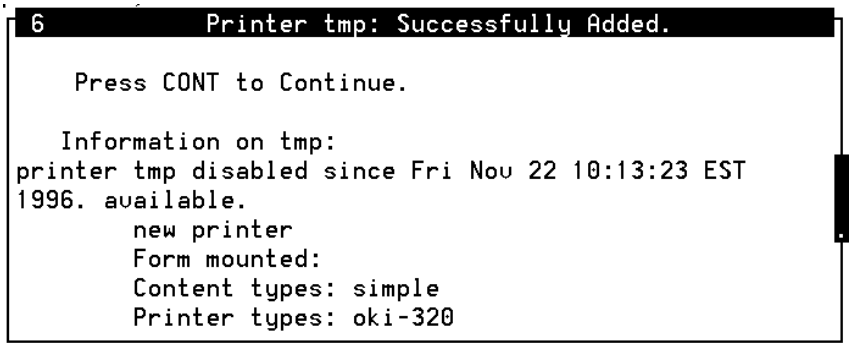
The system displays the Printer: Successfully Added window (Figure 127).

Figure 127. Printer: Successfully Added Window



24 Press **F8** (Cont).

The system displays the Setup Printer Access window (Figure 128).

Figure 128. Setup Printer Access Window

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25 Enter **all** in the `Users who are allowed access to this printer:` field.

Note: Do not press **ENTER** until all of the fields are complete.

26 Enter **none** in the `Users who are denied access to this printer:` field.

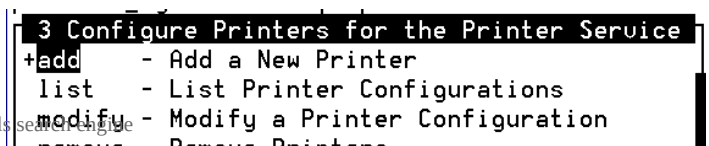
27 Enter **all** in the `Forms allowed on this printer:` field.

28 Enter **none** in the `Forms denied on this printer:` field.

29 Press **F3** (Save).

The system displays the Configure Printers for the Printer Service window (Figure 129).

Figure 129. Configure Printers for the Printer Service Window


3 Configure Printers for the Printer Service
+add - Add a New Printer
list - List Printer Configurations
modify - Modify a Printer Configuration

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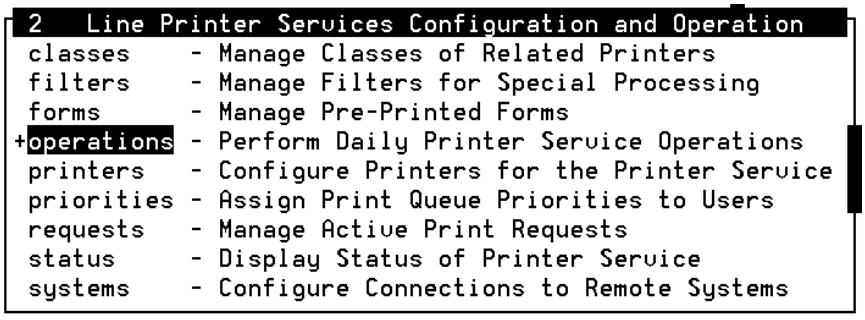
30 Press **F6** (Cancel).

The system displays the Line Printer Services Configuration and Operations window (Figure 130).

Figure 130. Line Printer Services Configuration and Operations Window


2 Line Printer Services Configuration and Operation
classes - Manage Classes of Related Printers
filters - Manage Filters for Special Processing
forms - Manage Pre-Printed Forms
+operations - Perform Daily Printer Service Operations
printers - Configure Printers for the Printer Service
priorities - Assign Print Queue Priorities to Users
requests - Manage Active Print Requests
status - Display Status of Printer Service
systems - Configure Connections to Remote Systems

Note: Wait at least 10 minutes before continuing with step 31.

31 Select:

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The system displays the Allow Classes/Printers to Accept Requests window (Figure 131).

Figure 131. Allow Classes/Printers to Accept Requests Window

32 Enter the name of the printer in the `Printer(s) and/or Class(es):` field, or press **F2** (Choices) to select from a menu. If you select from the Choices menu, you must press **F2** (Mark) to mark each class or printer you want to accept print requests, then press **F3** (Enter).

33 Press **F3** (Save).

34 Press **F6** (Cancel) twice.

The system displays the Line Printer Services Configuration and Operations window (Figure 130 on page 286).

35 Select:

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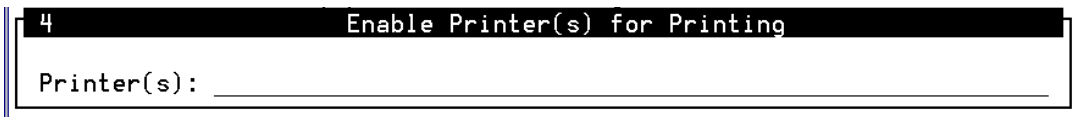
The system displays the Enable Printer(s) for Printing window (Figure 132).

Figure 132. Enable Printer for Printing Window



36 Enter the name of the printer in the `Printer(s):` field, or press **F2** (Choices) to select from a menu. If you select from the Choices menu, you must press **F2** (Mark) to mark each printer you want to enable, and then press **F3** (Enter).

37 Press **F3** (Save).

38 Press **F6** (Cancel).

The system displays the Line Printer Services Configuration and Operations window (Figure 130 on page 286).

39 Select:

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The system displays the Set Default Print Destination window (Figure 133).

Figure 133. Set Default Print Destination Window

40 Enter the name of the printer in the `Default Printer or Printer Class:` field, or press **F2** (Choices) to select from a menu.

41 Press **F3** (Save).

The system saves the printer configuration information.

Administering the Printer on the Voice System

To administer the voice system to recognize the printer:

1 At the `console Login:` prompt, enter **root**

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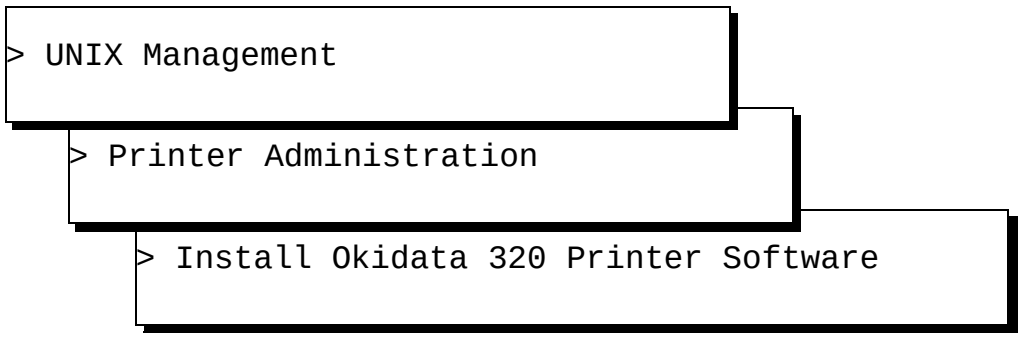
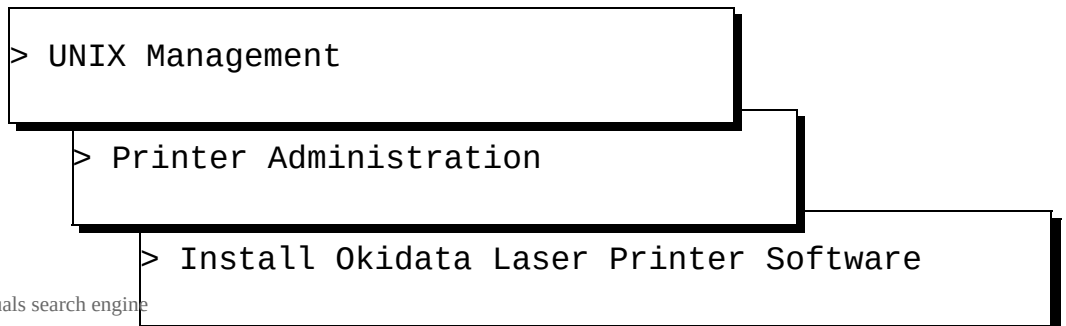


OR



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Setting Up the Printer

To set up a parallel printer for use with the system:

1. Log on to the system as root.
2. Enter **cd /etc/uucp**
3. Edit the Systems file to add an entry for the printer. This entry must include the hex representation for the printer IP address and port.

   hp4si Any hplaser - \x002*<hex value for port><hex value for IP address>*

   For example, **hp4si Any hplaser - \x0002238cc776928** uses 238c as the hex representation for port 9100 and c7769828 as the hex representation for IP address 199.118.152.40.
4. Edit the Devices file with the following line:

   hp4si tcp - - TLI \D

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8 Do one of the following:

- ~ If you want a banner page to print, skip the following steps a through c and continue with step 9.
- ~ If you do not want a banner page to print, complete the following steps a through c.

a Enter **/usr/lib/lp/model**

b Enter **cp standard LANHP**

c Edit the **LANHP** file and change `nobanner="no"` to `nobanner="yes"`.

9 Enter **lpstat -t**

The output should indicate the lpstat spooler is running and the printer you added should be displayed.

10 To make this printer the default, enter **lpadmin -dhp4si**

Remote Terminal Administration

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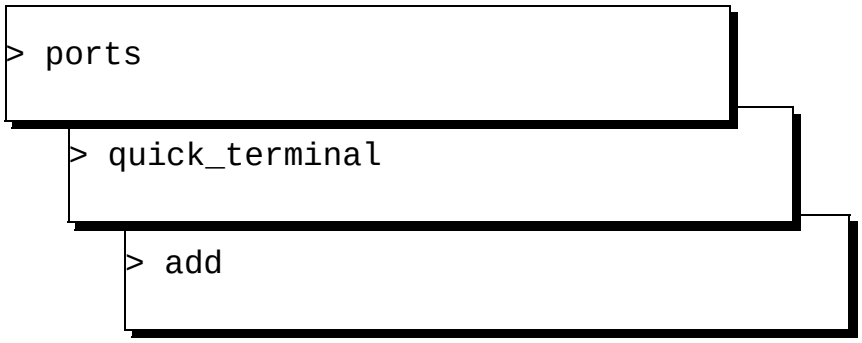
Configuring the Remote Terminal

Use the following procedure to configure a terminal (monitor):

1. Start at the UNIX System V Administration menu (Figure 17 on page 24) and select:



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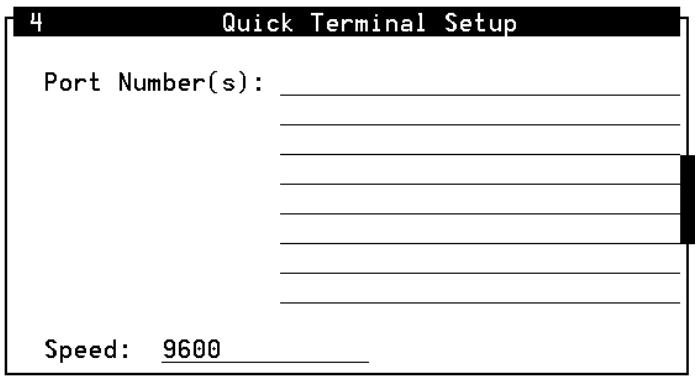
The system displays the Quick Terminal Setup window (Figure 134).

Figure 134. Quick Terminal Setup Window



2 If you know the name of the port monitor, enter the name in the `Port Number(s):` field, or press **F2** (Choices) to select from a menu.

3 Enter the speed in the `Speed:` field, or press **F2** (Choices) to select from a menu. The default is **19200**.

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Administering the Remote Terminal

To administer the voice system to recognize the modem:

1. At the `Console Login:` prompt, enter **root**

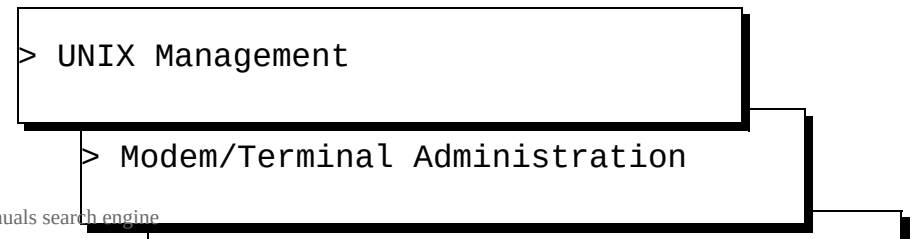
   The system prompts you for a password.

2. Enter your root password.

   The system displays the system prompt #.

3. Enter **cvis_menu**

4. Select:



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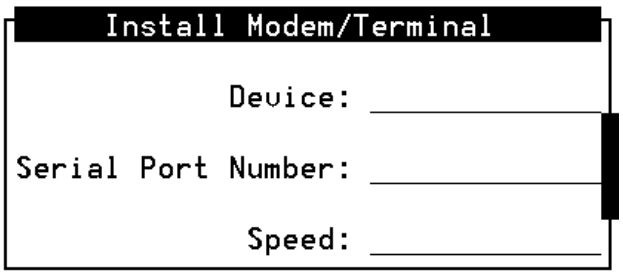
The system displays the Install Modem/Terminal window (Figure 135).

Figure 135. Install Modem/Terminal Window



5 Enter **terminal** in the `Device:` field.

6 Enter a serial port number or press **F2** (Choices) to display a list of valid port numbers for the `Serial Port Number:` field.

7 Enter **19200** in the `Speed:` field.

8 Press **F3** (Save).

The system displays a confirmation window.

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7 Common Administration

Overview

The procedures in this chapter are organized together to facilitate quick reference for some of the more common, or daily, administrative tasks. Common administration includes running system reports, and performing procedures such as system monitoring, media formatting, backups, and administering the date and time.

Command Menu

The Command Menu enables you to quickly access the System Monitor and Trace services, and exit the voice system. The Command Menu key appears as **F7** on almost every administration menu or window.

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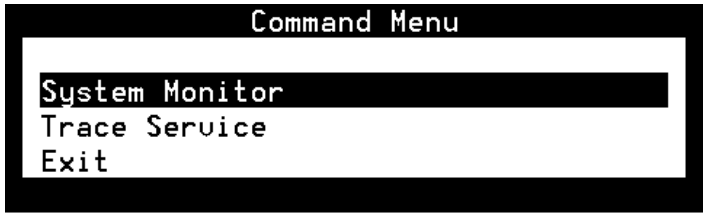
Accessing the Command Menu

To access the Command Menu:

1. Once you have accessed the Voice System Administration menus (as described in Chapter 3, Voice System Administration , from almost any menu or window, press **F7** (Cmd-Menu).

   The system displays the Command Menu (Figure 136).

Figure 136. Command Menu



System Monitor

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Accessing the System Monitor

To access the System Monitor window from the Command Menu:

1 Start at the Command Menu (Figure 136 on page 298) and select:

```
> System Monitor
```

The system displays System Monitor-Voice Channels window (Figure 137).

Figure 137. System Monitor-Voice Channels Window

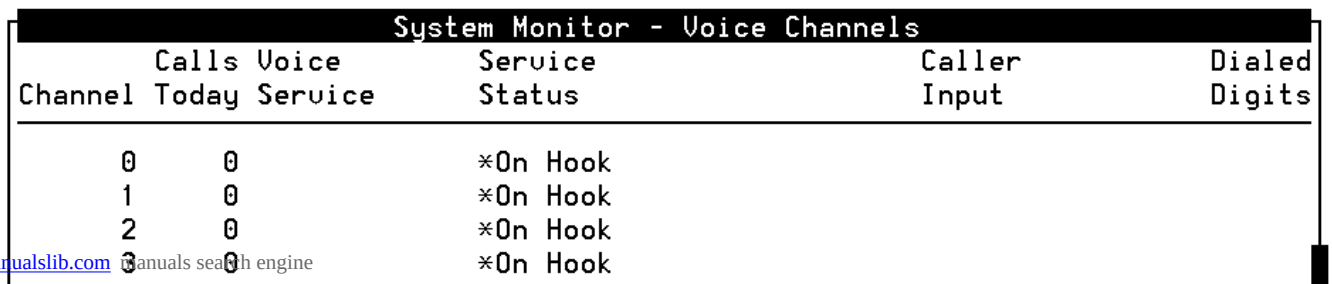

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Table 20 describes the columns in the System Monitor-Voice Channels window.

Table 20. Columns in the System Monitor Window

Column	Description
`Channel`	Lists the existing channels on the voice system. Virtual channels have the letter *v* appended to the channel number. These channels are not voice channels but are instead used for “data-only” applications. The number of virtual channels in the system depends on the software applications installed. In most systems, there is a single virtual channel for the playing of background speech.
`Calls Today`	Lists the number of calls made to a particular channel within the system. This column reflects the number of calls received during the day for the particular channel since the last stop and start of the voice system. When the end of the day occurs or the voice system is stopped and then restarted, the number of calls in the `Calls Today` column starts at zero. Calls are monitored for a 24-hour period, on any day beginning at

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Table 20. Columns in the System Monitor Window

Column	Description
`Service Status`	Indicates the state of each channel in the voice system. All hardware states (for example, On Hook, Foos, Manoos, Broken) are marked with an asterisk (*). This field is blank for virtual channels except when a transaction with a DIP is running. See Table 21 for a description of the status entries.
`Caller Input`	Indicates the last set of digits entered by the caller. For example, when a caller enters an account number in response to a transaction prompt, a series of touchtone digits is registered in the voice system from the caller. This information is collected by the voice system and displayed in this column by the System Monitor. This field always is blank for virtual channels.
`Dialed Digits`	Indicates the last set of digits dialed by the voice system during this transfer process. In many cases, the application transfers the caller to an attendant. The numbers used in this transfer process are collected by the

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Service Status Column

Table 21 describes the possible entries in the `Service Status` column and their meanings.

Note: All hardware states are marked with an asterisk (*).

Table 21. Entries for the Service Status Column

Service Status Entry	Description
*BROKEN	The channel is broken.
CCA	The channel is in process of call classification.
Coding	The channel is performing voice coding.
Collect	The channel is waiting for caller input.
dbdip1	The channel is used by a local database DIP.
*DIAGNOSE	The channel is on a circuit card that is being diagnosed.
Dialing	The channel is dialing digits.

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Table 21. Entries for the Service Status Column

Service Status Entry	Description
*D-MANOOS	(PRI feature only) The D-channel is manually out-of-service.
D-NETOOS	(PRI feature only) The D-channel network is out-of-service.
D-NONEX	(PRI feature only) The D-channel is nonexistent.
DIP <0 34>	The channel is processing a request from a data interface process.
*FOOS	The channel is facility out of service.
Host	The channel is currently accessing a host.
*HWOOS	(PRI feature only) The channel hardware is out of service.

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Table 21. Entries for the Service Status Column

Service Status Entry	Description
*NETOOS	(PRI feature only) The channel is in a network that is out of service.
Offhook	The channel is in service and has answered a call.
*ON HOOK	The channel is in service and is waiting for a call.
Pending	The channel is going into or leaving an operational state.
Talking	The channel is playing speech.
Transfer	The channel is transferring a call,
*UNKNOWN	The channel is experiencing a breakdown in communications or an internal voice system

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Changing the System Monitor Refresh Rate

By default, the system updates the voice channel status every 5 seconds.

To change the refresh rate to a specified amount of time:

1. Start at the System Monitor-Voice Channels window (Figure 137 on page 299) and press **F8** (Chg-Keys).

   The system displays the alternate set of function keys.

2. Press **F1** (Chg-Rate).

   The system displays the Change Refresh Rate window (Figure 138).

Figure 138. Change Refresh Rate Window

3. Enter the refresh rate in seconds in the `Refresh Rate:` field. Valid values are 1 to 30. The shorter the refresh rate, the more system resources are used to update the window.

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Printing the System Monitor-Voice Channel Report

To print a System Monitor-Voice Channel report:

1. Start at the System Monitor-Voice Channels window (Figure 137 on page 299) and press **F8** (Chg-Keys).

   The system displays the alternate set of function keys.

2. Press **F6** (Print).

   The system prints the System Monitor-Voice Channel Report.

Trace Service

A *trace* is a record of the events that occur on a voice channel, the voice system, or a host system.

See trace on page 602 in Appendix A, Summary of Commands, for more information on the **trace** command-line format.

Performing a Trace

To trace a channel or session or both:

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The system displays the Trace Service window (Figure 139).

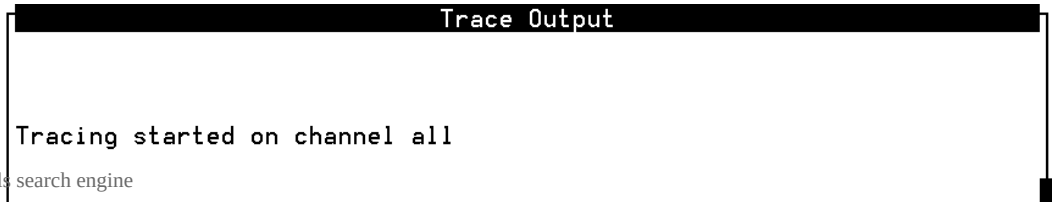
Figure 139. Trace Service Window

2 Enter a single channel or session number, or **all** in the `Channel or Session:` field.

3 Press **F3** (Save).

The system displays the Trace Output window (Figure 140).

Figure 140. Trace Output Window



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4 Select one of the following options while in the Trace Output window:

- Press **F1** (Pause) to stop the information from scrolling.
- Press **F2** (Prev Page) and **F3** (Next Page) to move around within the display.
- Press **F1** (Resume) to continue scrolling through the trace output.
- Press **DELETE** to stop the trace.
- Press **F2** (Print) from the Trace Service window to print the last 250 lines of output.

Note: Space in the **root** partition may become full from the trace service, so you should occasionally remove old files from the **/vs/trans/hostdata** directory.

Reports Administration

The Reports Administration window gives you access to some system

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Accessing the Reports Administration Menu

To access the Reports Administration menu:

1. At the `Console Login:` prompt, enter **root**

   The system prompts you for a password.

2. Enter your root password.

   The system displays the system prompt #.

3. Enter **cvis_menu**

   The system displays the Voice System Administration menu (Figure 42 on page 59).

4. Select:

```
> Reports
```

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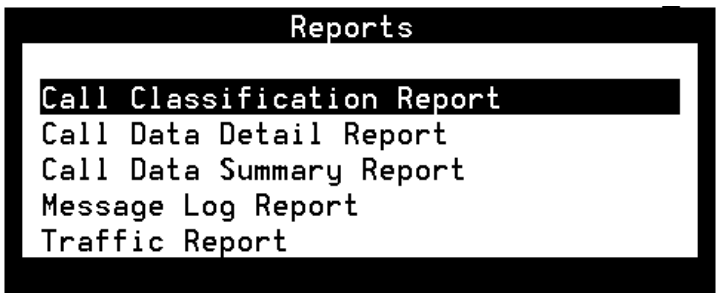
The system displays the Reports menu (Figure 141).

Figure 141. Reports Menu



Use the procedures in this section to access and run the various reports in this menu.

Call Classification Report

The Call Classification Report provides the following information for each extension or number dialed:

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- ~ Rang with no answer
- ~ Experienced network problems

• Summary statistics

Displaying the Call Classification Report

To display the Call Classification Report:

1 Start at the Reports menu (Figure 141 on page 310) and select:

```
> Call Classification Report
```

The system displays the Call Classification Report window (Figure 142).

Figure 142. Call Classification Report Window

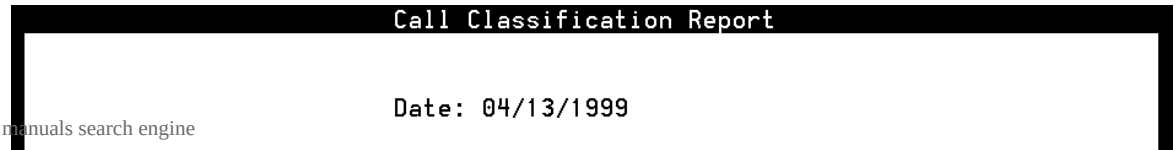

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Table 22 defines the columns in this window.

Table 22. Column Description for the Call Classification Report

Column Name	Description
`Dialed Number`	Specifies the telephone number from the transfer attempt. Telephone numbers have a 16-digit maximum, however only 12 digits are displayed in the report. Longer numbers are truncated and displayed with an asterisk (*).
`Total`	Specifies the total transfer attempts to connect to the `Dialed Number`. This number is the sum of `Failed`, `Unclass`, and `Class` attempts.
`Failed`	Specifies the number of transfer attempts that failed because no dial tone or no energy was detected. This number corresponds to call dispositions equal to *1*, *2*, *3*, *4*, *E*, or *p*.
`Unclass`	Specifies the number of blind transfer attempts. This number corresponds to call dispositions equal to *X*.

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Table 22. Column Description for the Call Classification Report

Column Name	Description
`Busy`	Specifies the number of transfer attempts that were busy. This number corresponds to call dispositions equal to *B*.
`Ring`	Specifies the number of transfer attempts that rang with no answer. This number corresponds to call dispositions equal to *N*.
`Other`	Specifies the number of times the network is busy and cannot complete a call (fast busy). This number corresponds to call dispositions *F*, *H*, *T*, or a recognized SIT.
`Total`	Specifies the sums of each column.
`Percent`	Specifies the percentage of the `Total`.

2 of 2

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Modifying the Call You can specify the beginning and ending dates for the Call Classification

The system displays the Actions Menu (Figure 143).

Figure 143. Actions Menu

2 Select:

```
> Modify
```

The system displays the Modify Call Classification Report window (Figure 144).

Figure 144. Modify Call Classification Report Window

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3 Enter the beginning and ending dates for the report in the `Start Date:` and `End Date:` fields using the format of *mm/dd/yyyy* for month, day, and year to limit the report to a certain date range. If you do not specify the year, the report uses the current year.

   A start date of 04/01/2000 and an end date of 04/30/2000 means that the voice system displays call classification information on calls made in the month of April 2000. You can specify a range of up to 365 days, including the current date. If you specify only the start date or the end date, you receive a report for that day only. The end date must be greater than or equal to the start date. Future start dates and end dates are invalid.

4 Press **F3** (Save).

   The system displays the previous Call Classification Report window.

5 (Optional) Press **F8** (Actions).

   The system displays the Actions Menu (Figure 143 on page 314).

6 (Optional) Select:

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Printing the Call Classification Report

The print option provides a complete printout of the Call Classification report.

Note: You cannot print this report if a printer is not configured for use with the voice system. See Printer Administration on page 278 in Chapter 6, Peripheral Administration, for more information about printer administration.

To print the Call Classification Report:

1. Start at the Call Classification Report window (Figure 142 on page 311) and press **F8** (Actions).

   The system displays the Actions Menu (Figure 143 on page 314).

2. Select:

```
> Print
```

   The system prints the Call Classification Report using the last set of

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Updating the Call Classification Report

Use the Update function to redisplay the report. The report reflects the values last saved to the voice system.

To update the Call Classification Report:

1. Start at the Call Classification Report window (Figure 142 on page 311) and press **F8** (Actions).

   The system displays the Actions Menu (Figure 143 on page 314).

2. Select:

   ```
   > Update
   ```

   The system updates the report and displays the values last saved.

Call Data Detail Report

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Displaying the Call Data Detail Report

To display the Call Data Detail Report:

1 Start at the Reports menu (Figure 141 on page 310) and select:

```
> Call Data Detail Report
```

The system displays the Call Data Detail Report window (Figure 145).

Figure 145. Call Data Detail Report Window

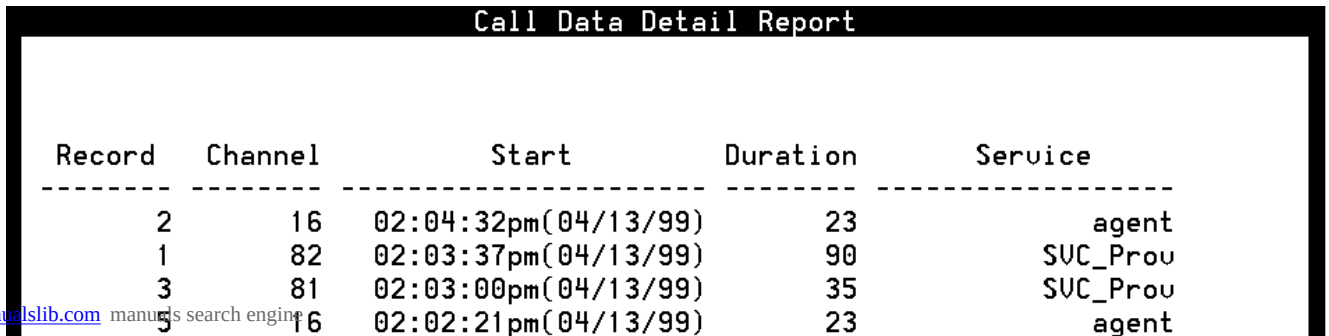
Call Data Detail Report
Record Channel Start Duration Service
2 16 02:04:32pm(04/13/99) 23 agent
1 82 02:03:37pm(04/13/99) 90 SVC_Prov
3 81 02:03:00pm(04/13/99) 35 SVC_Prov
5 16 02:02:21pm(04/13/99) 23 agent

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Table 23 defines the columns on this window. If multiple applications are invoked during a call, the report displays a line of summary data for the call, followed by a line of data for each application in the call.

Table 23. Column Description for the Call Data Detail Report

Column Name	Description
Record	Specifies the database record number of each call made to the voice system.
Channel	Specifies the channel on which the call was made.
Start	Specifies the time and date the call began. If multiple applications were invoked during the call, the first line of the display shows the time and date the call began. Subsequent lines for the call show the time and date that each application began.
Duration	Specifies the length of the call in seconds. If multiple applications were invoked during the call, the first line of the display for the call shows the total length of all applications in the call. Subsequent lines for the call show the

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Modifying the Call Data Detail Report

You can tailor the Call Data Detail Report to limit the display by changing one or more of the following parameters:

- Number of most recent call records you want to include
- Date of the data to include in the report
- Service associated with the call data

To modify the Call Data Detail Report:

1. Start at the Call Data Detail Report window (Figure 145 on page 318) and press **F8** (Actions).

   The system displays the Actions Menu (Figure 143 on page 314).

2. Select:

```
> Modify
```

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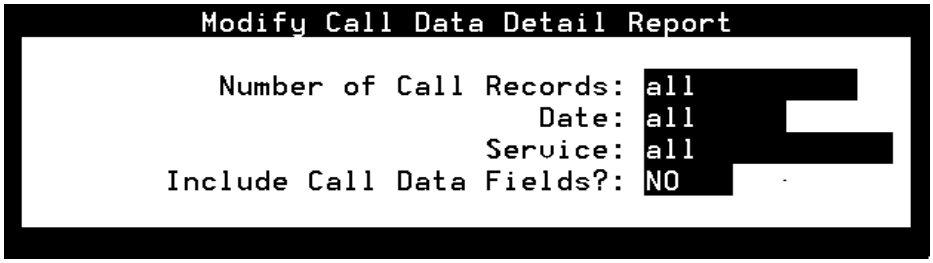
The system displays the Modify Call Data Detail Report window (Figure 146).

Figure 146. Modify Call Data Detail Window



3 Enter a number, range of numbers, or **all** in the `Number of Call Records:` field to specify the number of most recent records to include in the report. The default is **all**.

4 Enter the date to which you want to limit the report information, or **all**, in the `Date:` field. Use the format of *mm/dd/yyyy* for month, day, and year. If you do not specify a year, the system uses the current year. The default is **all**, meaning that the report displays all dates.

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For example, if the system contains 10 records for yesterday and 10 records for today and you enter **6** in the `Number of Call Records:` field and enter yesterday's date in the `Date:` field, the Call Data Detail Report displays no records. This is because the last six records were created for the current day, not for yesterday's date.

However, if you enter **all** in the `Number of Call Records:` field and yesterday's date in the `Date:` field, the Call Data Detail Report displays only the records from yesterday.

5 Enter a service name in the `Service:` field to limit the report to a particular service, or **all**, or press **F2** (Choice) to select from the menu. The default is **all**, meaning that the report includes every service recognized by the voice system.

6 In the `Include Call Data Fields?:` field, to specify if call event data should be included in the report, enter **Yes** or **No**, or press **F2** (Choice) to select from a menu, The default is **No**. If call event data does exist for a

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The system displays the Actions Menu (Figure 150 on page 337).

9 (Optional) Select:

```
> Update
```

The system redisplays the Call Data Detail Report window with the new parameters.

Printing the Call Data Detail Report

The print option provides a complete printout of the Call Data Detail report.

Note: You cannot print this report if a printer is not configured for use with the voice system. See Printer Administration on page 278 in Chapter 6, Peripheral Administration , for more information about printer administration.

To print the Call Data Detail report:

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2 Select:

```
> Print
```

The system prints the Call Data Detail Report using the last set of options that was saved to the voice system.

Updating the Call Data Detail Report

Use the Update function to redisplay the report. The report reflects the values that were last saved to the voice system. See Modifying the Call Data Detail Report on page 320 for how to modify this output.

To update the Call Data Detail Report:

1 Start at the Call Data Detail Report window (Figure 145 on page 318) and press **F8** (Actions).

The system displays the Actions Menu (Figure 143 on page 314).

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Call Data Summary Report

The Call Data Summary Report provides an hourly summary of the calls made to the voice system. This report is similar to the Call Data Detail Report, except that the Call Data Summary Report shows the calls on an *hourly* basis by service. The system maintains approximately 7 days worth of data.

Note: Call data summary information is prepared at midnight for the entire day. Therefore, call data summary information for the current day is not available until after midnight.

Displaying the Call Data Summary Report

To display the Call Data Summary Report:

1 Start at the Reports menu (Figure 141 on page 310) and select:

```
> Call Data Summary Report
```

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The system displays the Call Data Summary Report window (Figure 147).

Figure 147. Call Data Summary Report Window

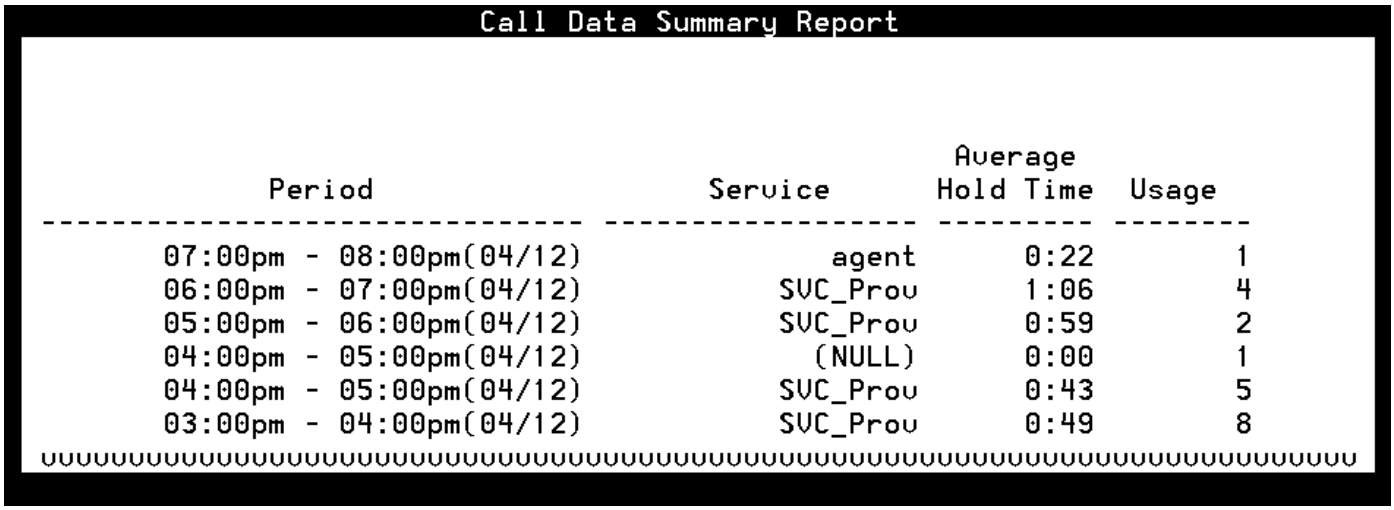
Call Data Summary Report
Period
Service
Average Hold Time
Usage
07:00pm - 08:00pm(04/12) agent 0:22 1
06:00pm - 07:00pm(04/12) SVC_Prov 1:06 4
05:00pm - 06:00pm(04/12) SVC_Prov 0:59 2
04:00pm - 05:00pm(04/12) (NULL) 0:00 1
04:00pm - 05:00pm(04/12) SVC_Prov 0:43 5
03:00pm - 04:00pm(04/12) SVC_Prov 0:49 8

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Table 24 describes the columns on this window.

Table 24. Column Description for the Call Data Summary Report

Column Name	Description	Comment
`Period`	Time, in hourly increments, when calls were made to the voice system.	
`Service`	Script associated with a group of calls made during the specified time.	
`Average Hold Time`	Average duration of a call for the specified time in minutes and seconds.	
`Calls`	Total number of calls for the specified time.	
`Event Description`	Name of the call data field.	Appears only when the `Include Call Data Fields?:` field is set to **Yes**. See Modifying the Call

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Table 24. Column Description for the Call Data Summary Report

Column Name	Description	Comment
`Event No`	Identifying number for each call data message.	Appears only when the `Include Call Data Fields?:` field is set to **Yes**. See Modifying the Call Data Summary Report.
`Count`	Either the total value of all calls for this event during the period if the event is a numeric field or the total number of all calls during the period if the event is a non-numeric field.	Appears only when the `Include Call Data Fields?:` field is set to **Yes**. See Modifying the Call Data Summary Report.

Modifying the Call Data Summary Report

You can tailor the Call Data Summary Report to limit the display by changing one or more of the following parameters:

- Day of the week and hours to perform data collection

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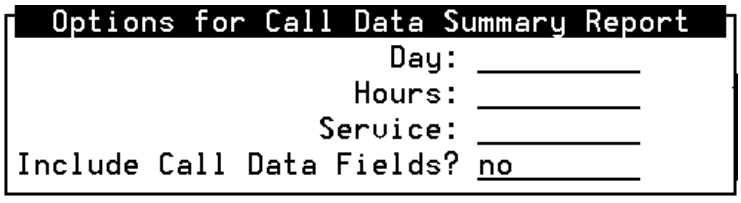
The system displays the Actions Menu (Figure 143 on page 314).

2 Select:

```
> Modify
```

The system displays the Options for Call Data Summary Report window (Figure 148).

Figure 148. Options for Call Data Summary Report Window



3 Enter the day of the week, Monday through Sunday, for which you want to obtain report information in the `Day:` field, or press **F2** (Choices) to select

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If you enter a range between 9 and 16, the system displays call data for calls made between 9 a.m. and 5 p.m. The default is **all**, meaning that the system displays call data for the entire 24 hour period for the day.

Note: Hourly Call Data Summary Reports are not processed until midnight of each day. If you make a request for information on Tuesday, the information will not be displayed until the following day, Wednesday.

5 Enter a service name, or **all**, or press **F2** (Choices) to select from a menu in the `Service:` field to limit the report to a particular service. The default is **all**, meaning that the report displays call data for all services.

6 Enter **Yes** or **No**, or press **F2** (Choices) to select from a menu in the `Include Call Data Fields?:` field to specify if event data should be included on the report. The default is **No**. If call event data exists for a particular record, this information appears immediately after the record entry on the Call Data Summary Report window.

7 Press **F3** (Save).

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```
> Update
```

The system redisplays the Call Data Summary Report window with the new parameters.

Printing the Call Data Summary Report

The print option provides a complete printout of the Call Data Summary report.

Note: You cannot print this report if a printer is not configured for use with the voice system. See Printer Administration on page 278 in Chapter 6, Peripheral Administration, for more information about printer administration.

To print the Call Data Summary Report:

1. Start at the Call Data Summary Report window (Figure 147 on page 326) and press **F8** (Actions).

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2 Select:

```
> Print
```

The system prints the Call Data Summary Report using the last set of options saved to the voice system.

Updating the Call Data Summary Report

Use the Update function to redisplay the report. The report reflects the values last saved to the voice system. See on page 327 for how to modify this report.

To update the Call Data Summary Report:

1 Start at the Call Data Summary Report window (Figure 145 on page 318) and press **F8** (Actions).

The system displays the Actions Menu (Figure 143 on page 314).

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Message Log Report

The Message Log Report allows you to access voice system error messages including the:

- Priority level of the error
- Date and time the error occurred
- Source of the message
- Type of circuit card associated with the message, as well as the circuit card number and channel number
- Descriptive text

Displaying the Message Log Report

To display the Message Log Report:

1 Start at the Reports menu (Figure 141 on page 310) and select:

```
> Message Log Report
```

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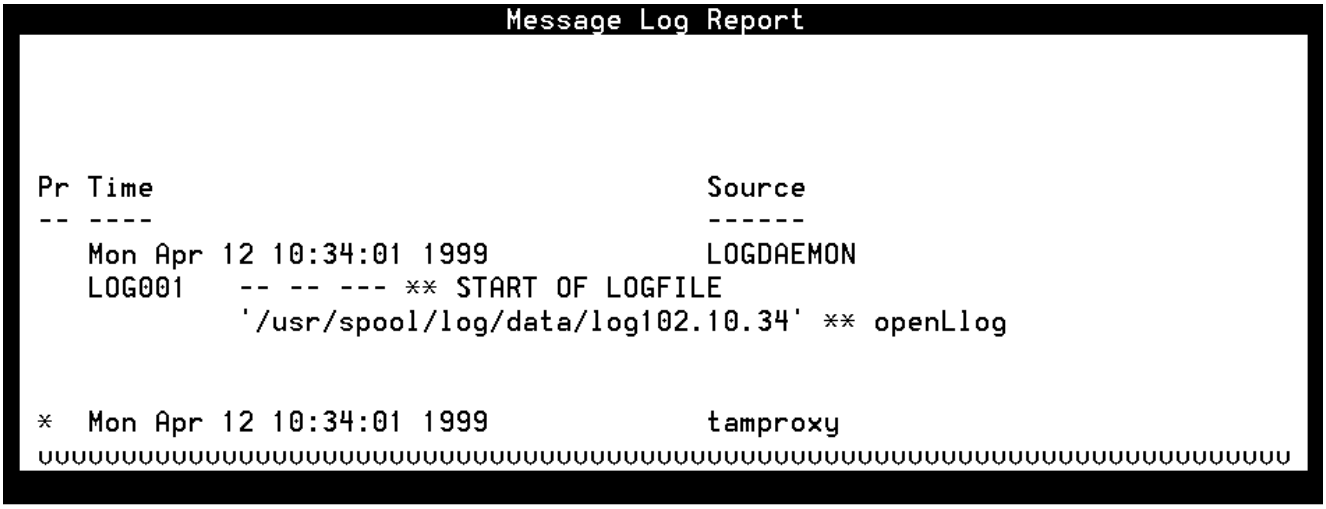
The system displays the Message Log Report window (Figure 149).

Figure 149. Message Log Report Window


Message Log Report
Pr Time Source
-- ---- ------
Mon Apr 12 10:34:01 1999 LOGDAEMON
LOG001 -- -- --- ** START OF LOGFILE
'/usr/spool/log/data/log102.10.34' ** openLlog
* Mon Apr 12 10:34:01 1999 tamproxy

Use **F2** (Prev Page) and **F3** (Next Page) to scroll through the report.

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Table 25 defines the information in the Message Log Report.

Table 25. Entry Description for the Message Log Report

Entry	Description
Pr	Priority classification of error messages. The priority is identified by one of the following codes: ~ *C (critical) — the problem is interrupting service and immediate action is needed. ~ ** (major) — a potentially serious problem exists that should be fixed soon. ~ * (minor) — no immediate action is necessary, but the system condition should be monitored. ~ – (none) — no error; informational purposes only.
Time	Date and time when error message was generated.

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Table 25. Entry Description for the Message Log Report

Entry	Description
Source	Originating software process; messages are divided into subgroups according to the software process that outputs the messages. The following is a sample of possible sources: • The call data handler (CDH) process accumulates generic call statistics and application messages. • The data interface process (DIP). • The maintenance (MTC) process runs temporary diagnostics. • The transaction state machine (TSM) process controls transactions via script execution and commands. • The voice response output process (VROP) manages speech data base and downloads speech data to VRU. • The DIO processes are the disk input/output for VROP.

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Explaining a Message in the Message Log Report

The Explain option on the Actions Menu allows you to display more information about a specific message.

To get additional information about a particular message in the Message Log Report window:

1. Start at the Message Log Report window (Figure 149 on page 334) and press **F8** (Actions).

   The system displays the Actions Menu (Figure 150).

Figure 150. Message Log Report Actions Menu

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2 Press **F3** (Explain).

The system displays the Explain Message ID window (Figure 151).

Figure 151. Explain Message ID Window

3 Enter the ID of the message for which you want more information in the `Message ID:` field.

4 Press **F3** (Save).

The system displays additional information about the specified message.

Modifying the Message Log Report

You can tailor the Message Log Report to limit the display by changing one or more of the following parameters:

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- Message ID
- Number of most recent messages to be displayed

By default, the Message Log Report is configured to display every message.

To limit what is displayed in the Message Log Report window:

1 Start at the Message Log Report window (Figure 149 on page 334) and press **F8** (Actions).

The system displays the Actions Menu (Figure 150 on page 337).

2 Select:

```
> Modify
```

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The system displays the Modify Message Log Report window (Figure 152).

Figure 152. Modify Message Log Report Window

3 Enter ***C** (critical), ****** (major), ***** (minor), **alarms**, **all**, or **events** in the `Priority:` field to limit the type of messages you want to see based on priority, or press **F2** (Choices) to select from a menu. The default is **all**.

4 Enter a single message source or multiple message sources separated

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5 Enter a single circuit card number or multiple circuit card numbers separated by commas in the `Card:` field to limit the display to specific circuit cards. There is no default value and the Choices menu is not available. If you specify **all** in the `Card:` field, the display is limited to messages about voice system circuit cards only.

6 Enter the start time for the message search in the `Start Time:` field, that is, the time of the first message to be displayed. For example, entering **02/05 10:00** indicates that you want to search messages that occurred on February 5 after 10 a.m.

Use the format of *MM/DD HH:MM* for month, day, hour, and minute. If the `Start Time` field is left blank, the beginning of the message log is used. If you enter **today**, all entries since the beginning of the current day are searched.

7 Enter the stop time for the message search in the `Stop Time:` field, that is, the time of the last message to be displayed.

Use the format of *MM/DD HH:MM* for month, day, hour, and minute. If the

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8 Enter the ID of the messages to be displayed in the `Message ID:` field. Enter a single ID, multiple IDs separated by commas (for example, **TSM001**,**TWIP003**), or **all**.

9 Enter a single number from 1 to 999, or **all** in the `Number of Messages to be Displayed:` field to specify the number of most recent messages to be displayed. If you enter **all**, the report displays all messages maintained by the log. If you enter a single number, the voice system searches all records and displays only that number of the most recent records that match the specified start and stop time, priority, circuit card, and source. For example, if you enter **5**, the system displays only the **5** most recent matching records.

10 Press **F3** (Save).

The system displays the previously displayed Message Log report.

Use **F2** (Prev Page) and **F3** (Next Page) to scroll through the report.

11 (Optional) Press **F8** (Actions).

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The system updates the report and displays the values last saved.

Printing the Message Log Report

The print option provides a complete printout of the Message Log Report.

Note: You cannot print this report if a printer is not configured for use with the voice system. See Printer Administration on page 278 in Chapter 6, Peripheral Administration, for more information about printer administration.

To print the Message Log Report:

1. Start at the Message Log Report window (Figure 149 on page 334) and press **F8** (Actions).

   The system displays the Actions Menu (Figure 150 on page 337).

2. Select:

```
> Print
```

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To update the Message Log Report:

1 Start at the Message Log Report window (Figure 149 on page 334) and press **F8** (Actions).

The system displays the Actions Menu (Figure 150 on page 337).

2 Select:

```
> Update
```

The system updates the report and displays the values last saved.

Administrative Commands Log Report

The Administrative Commands Log report makes it possible to log the use of critical administrative commands and activities such as voice system stops

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Commands and Activities Included in the Report

The following administrative commands and activities are monitored for inclusion in this report:

- Digital switch interface changes
- Voice equipment commands: **spfunc**, **t1prot**, **eqprot**, **hconfig**
- System control commands: **start_vs**, **stop_vs**, **disable**, **autoreboot**, **delete**, **remove**, **restore**, **hdelete**, **trace**, **erase**, **diagnose**, **vs_enable**
- Talkfile (speech files) commands: **add phrase**, **copy phrase**

Content of the Administrative Commands Log Report

The command or activity results in either one or two entries to the Administrative Commands Log:

- Start message entries — indicate the execution of the administrative command or activity
- End message entries — indicate the result of the command or activity if the information would be critical for troubleshooting purposes

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```
> Message Log Report
```

The system displays the Message Log Report window (Figure 149 on page 334).

2 Press **F8** (Actions).

The system displays the Actions Menu (Figure 150 on page 337).

3 Select:

```
> Modify
```

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The system displays the Modify Message Log Report window (Figure 153).

Figure 153. Modify Message Log Report Window

4 Enter **admin** in the `Priority:` field.

5 Enter a software process source in the `Source:` field, or enter **all** to include all software process sources.

6 Leave the `Card:` field blank.

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Use the format of *MM/DD HH:MM* for month, day, hour, and minute. If the `Start Time:` field is left blank, the beginning of the administrative command log is used.

8 Enter the stop time for the message search in the `Stop Time:` field, that is, the time of the last message to be displayed.

Use the format of *MM/DD HH:MM* for month, day, hour, and minute. If the `Stop Time:` field is left blank, the end of the administrative command log is used.

Note: If nothing is entered in the `Start Time:` and `Stop Time:` fields, the entire administrative command log is displayed.

9 Leave the `Message ID:` field blank.

10 Enter a single number from 1 to 999, or **all** in the `Number of Messages to be Displayed:` field to specify the number of most recent entries to be displayed. If you enter **all**, the report displays all entries maintained by the log. If you enter a single number, the voice system searches all records and displays only that number of the most recent entries that

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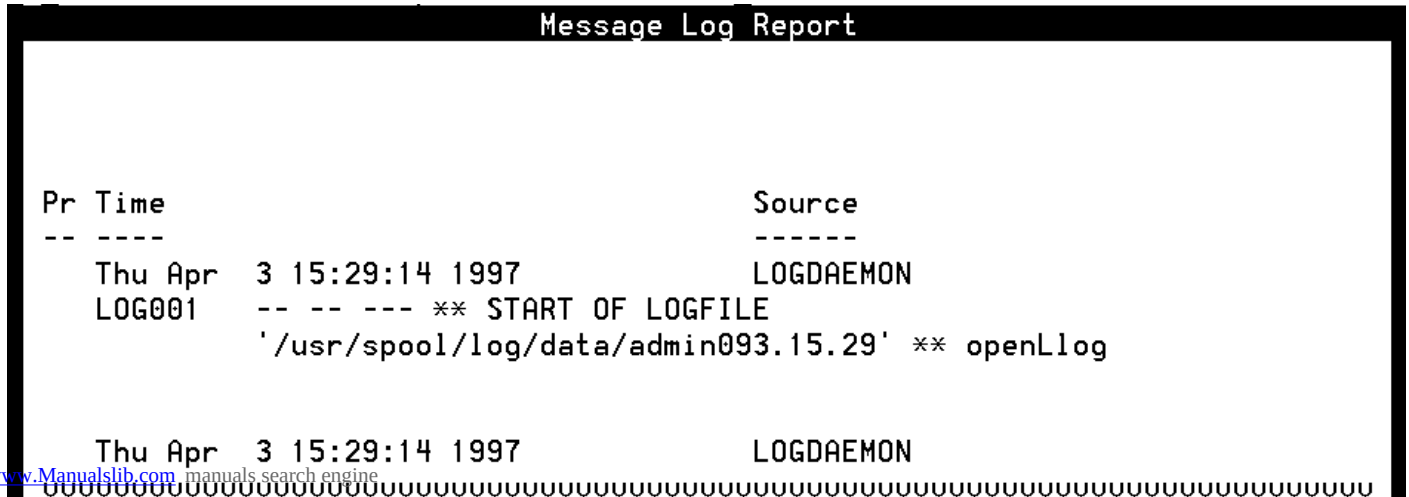
11 Press **F3** (Save).

The system displays the Message Log Report window, now with the Administrative Commands Log Report data (Figure 154).

Figure 154. Administrative Commands Log Report Window (Displayed under the Message Log Report Window)


Message Log Report
Pr Time Source
-- ---- ------
Thu Apr 3 15:29:14 1997 LOGDAEMON
LOG001 -- -- --- ** START OF LOGFILE
'/usr/spool/log/data/admin093.15.29' ** openLlog
Thu Apr 3 15:29:14 1997 LOGDAEMON

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- ~ `Time` — Date and time when the command or activity was executed
- ~ `Source` — Name of the originating software process that executed the command or activity
- ~ `Login ID` — Login ID that executed the command or activity (if applicable). A common login ID listed is **root**
- ~ `Administrative command text` — Full text of the command or activity executed with all applicable parameters
- ~ `Disposition` — Full text of the result of the command or activity

12 (Optional) Press **F8** (Actions).

The system displays the Actions Menu (Figure 150 on page 337).

13 (Optional) Select:

```
> Update
```

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Chapter 6, Peripheral Administration , for more information about printer administration.

To print the Administrative Commands Log Report:

1. Start at the Administrative Commands Log Report window (Figure 154 on page 349) displayed under the Message Log Report window and press **F8** (Actions).

   The system displays the Actions Menu (Figure 150 on page 337).

2. Select:

```
> Print
```

   The system prints the Administrative Commands Log Report using the last set of options that were saved to the voice system.

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1 Start at the Administrative Commands Log Report window (Figure 154 on page 349) displayed under the Message Log Report window and press **F8** (Actions).

The system displays the Actions Menu (Figure 150 on page 337).

2 Select:

```
> Update
```

The system updates the report and displays the values last saved.

Traffic Report

The Traffic Report provides call volume information for approximately the last 7 days, including the:

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Displaying the Traffic Report

To display the Traffic Report:

1 Start at the Reports menu (Figure 141 on page 310) and select:

```
> Traffic Report
```

The system displays the Traffic Report window (Figure 155).

Figure 155. Traffic Report Window

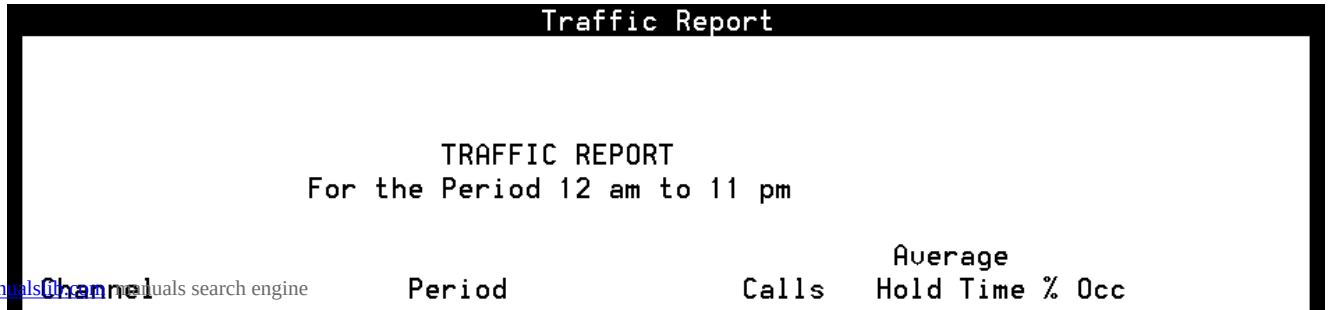

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Table 26 describes the information in this report.

Table 26. Entry Description for the Traffic Report

Entry	Description
Channel	Channel that handled the call
Period	Time period when system traffic is monitored
Calls	Number of calls made during the indicated time period
Average Hold Time	Average duration of a call for the specified time in minutes and seconds
%Occ	Percentage of occupancy (that is, the proportion of the hour that the channel was in use)

Modifying the Traffic Report

To change the Traffic Report, use the Modify function on the Actions Menu (Figure 143 on page 314). You can specify the date and time when you want

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The system displays the Actions Menu (Figure 143 on page 314).

2 Select:

```
> Modify
```

The system displays the Modify Traffic Report window (Figure 156).

Figure 156. Modify Traffic Report Window

3 Enter a day of the week, Monday through Sunday, or **Yesterday** in the

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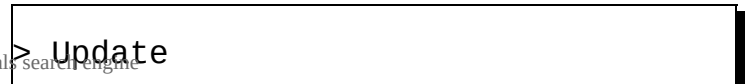
5 Enter **Yes** or **No** in the `Summarize?:` field to specify whether you want to see a Traffic Summary Report. The default is **No**, meaning that the system displays the Traffic Report instead of the Traffic Summary Report. The two reports are described below:

- ~ The Traffic Summary report provides information on the total traffic volume for each channel for the range of hours specified in the Traffic Report window.
- ~ The Traffic Report provides traffic volume for each channel in 1-hour increments starting and ending with the hours specified in the Traffic Report window.

6 Press **F3** (Save)

The system displays the previously displayed call traffic report.

7 (Optional) Select:



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Printing the Traffic Report

The print option provides a complete printout of the Traffic Report.

Note: You cannot print this report if a printer is not configured for use with the voice system. See Printer Administration on page 278 in Chapter 6, Peripheral Administration, for more information about printer administration.

To print the Traffic Report:

1. Start at the Traffic Report window (Figure 155 on page 353) and press **F8** (Actions).

   The system displays the Actions Menu (Figure 143 on page 314).

2. Select:

```
> Print
```

The system prints the Traffic Report using the last set of options that were

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To update the Traffic Report:

1 Start at the Traffic Report window (Figure 155 on page 353) and press **F8** (Actions).

The system displays the Actions Menu (Figure 143 on page 314).

2 Select:

```
> Update
```

The system updates the report and displays the values last saved.

Signal Processing Activity Report

The Signal Processing Activity report is not part of the Reports Administration menu. It is generated through the use of commands.

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The data in the Signal Processing Activity report is collected by the **spadc** command. The **spar** command then summarizes and displays the data in an ASCII file.

Data Collection for the Signal Processing Activity Report

The **spadc** command collects data for the day of the week on which the command is executed, and outputs the data to an ASCII file named **mm-dd-yyyy** (for example, 09-12-2000).

The **mm-dd-yyyy** file contains one line of data for each 5-minute period during which the voice system is running. Each line consists of 10 fields:

- Field 1 — Date and time using the *mm/dd/yyyy:HH:MM* format.
- Field 2 — Feature licensing usage information. This field contains 10 entries representing average and peak values for the Text-to-Speech, Dial Pulse Recognition, and WholeWord Speech Recognition feature package use of the signal processing resources.
- Fields 3–8 — One field for each of the speech and signal processing circuit cards in the system. Each field contains entries representing

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- ~ FAX
- ~ Text-to-Speech
- ~ Dial Pulse Recognition
- ~ Play
- ~ Code
- ~ CELP

See spadc on page 574 and spar on page 575 in Appendix A, Summary of Commands, for more information about creating a Signal Processing Activity report.

Custom Database Reports

To write a **cron** job that generates your own ORACLE database reports, include the following ORACLE environment variables in the shell application:

```
# beginning of ORACLE environment variable definition
ORACLE_SID=A;export ORACLE_SID
```

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Common Administrative Procedures

See “Common System Procedures," in *UCS 1000 R4.2 System Reference*, 585-313-210, for information and procedures to perform the following common administrative tasks:

- Format diskettes and cartridge tapes
- Create a system backup
- Restore the system from backup
- Change the system date or time

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A Summary of Commands

Overview

This appendix provides an alphabetical list and brief description of all commands. Table 27 lists all the commands.

Table 27. Command Synopsis

Command	Function
add	Adds a phrase to a UNIX talkfile (SSP only).
addhdr	Adds a voice or code header to a speech file (SSP only).
alarm_cutoff	Turns off a buzzer on the TAM unit.
annotate	Annotates a TSM trace stream with a message.

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Table 27. Command Synopsis

Command	Function
attach	Attaches a unit.
autoreboot	Changes or displays the parameters associated with the autoreboot feature.
bbs	Reports the status of the voice system Bulletin Board.
ccarpt	Generates a call classification data summary report.
cddrpt	Generates a call data detail report.
cdsrpt	Generates a call data summary report for a specific date.
checktf	Checks for the existence of talkfiles in the voice system.
codetype	Identifies the type of coding header in a speech file (SSP only).
configure_tam	Downloads the configuration data to the TAM unit.
copy	Copies a phrase from one UNIX file to another UNIX file (SSP

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Table 27. Command Synopsis

Command	Function
dbcheck	Checks the resources available in the database.
dbfrag	Lists fragmentation information on the database.
dbfree	Checks the space available in the database by partition.
dbused	Provides database use by **oracle** user.
decode	Converts adpcm16 or adpcm32 files to pcm64 files (SSP only).
defservice	Defines an IRAPI service.
delete card/channel	Removes a card or channel from a service or an equipment group.
delete eqpgrp	Removes an equipment group.
delete service/startup	Removes the assignment of a service to DNIS and ANI numbers or of a service assigned directly to a channel.
detach	Places a unit in the nonexistent state.

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Table 27. Command Synopsis

Command	Function
display assignments	Displays the services assigned to channels.
display card	Displays information about specified cards.
display channel	Displays channel information.
display dnis	Displays the services assigned to DNIS and ANI numbers.
display eqpgrp/group	Displays an equipment group report.
display messages	Displays system messages.
display_permissions	Displays voice system security permission information for the user.
display services	Lists all valid services to scripts.
display_tam	Checks the resources monitored by the TAM unit.
displaypkg	Lists the software packages installed on the voice system.

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Table 27. Command Synopsis

Command	Function
erase	Deletes a phrase from a UNIX talkfile (SSP only).
explain	Displays online error message explanations.
faxit	Queues or sends a fax.
faxlog	Displays a status of the fax transmissions.
findHomes	Populates a user's home directory with files saved as part of an assisted upgrade.
fixLogFile	Upgrades existing logging files.
iCk	Performs various integrity checks based on the rules in a script file.
lComp	Combines message files to produce compressed and expanded format files.
list	Lists the directory entries for specific phrases (SSP only).

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Table 27. Command Synopsis

Command	Function
logEvent/logMsg	Allows shell scripts to log a specific message.
logFmt	Displays and changes the parameters used to display messages and explanation texts.
mkAlerter	Reads an alerter description and generates the code that implements the description.
mkheader	Allocates user memory for script variables.
mkimage	Performs a complete system backup.
msgadm	Facilitates the administration of system messages.
newscript	Updates the changes to all currently assigned scripts.
pkgadd	Transfers the contents of a software package from the distribution medium or directory to the voice system.

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Table 27. Command Synopsis

Command	Function
remove	Places a unit in the manual-out-of-service (MANOOS) state.
removepkg	Removes a software package.
restore	Restores a unit to the in-service (INSERV) state.
retireAlarms	Turns off minor, major, and critical alarms on the TAM unit.
rmdb	Displays the state of the resource manager and modify debug levels.
show_sys	Allows you to retrieve configuration and administration information from customer sites.
soft_disc	Sends a disconnect to a script on a channel or channels.
soft_szr	Starts a script on a channel.
spadc	Collects data on the signal processing resources. Use the **spar**

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Table 27. Command Synopsis

Command	Function
spsav	Backs up speech (SSP only).
spStatus	Displays information about the pack file running on an SSP card.
spVrsion	Prints the version of the SSP driver currently installed on a machine.
start_vs	Brings the voice system up to a fully operational state.
stop_vs	Stops the voice system software gracefully.
striphdr	Strips voice or code headers from a speech file (SSP only).
sysmon	Executes a program that monitors incoming telephone lines and the associated cards to see that they are functional.
tas	Executes the transaction assembler program to assemble script instructions.

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Table 27. Command Synopsis

Command	Function
upg	Provides automated assistance in upgrading the system software to the latest release.
vfyLogMsg	Verifies the information associated with a specific logging message format.
vsdisable	Disables the automatic restarting of the voice system.
vsenable	Enables the automatic starting of the voice system at system reboot.
vusage	Displays the current load on the voice system (SSP only).
wl_copy	Copies FlexWord™ vocabularies to disk (SSP only).
wl_edit	Edits FlexWord wordlists (SSP only).
wl_gen	Creates data files for a FlexWord vocabulary.

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add

The **add** command adds a phrase to a Unix talkfile (SSP only).

Synopsis

add phrase <*phrase number*> to talkfile <talkfile number> from <*file_name*>

Description

The **add** command adds phrases to the specified talkfile that were previously extracted from another talkfile using the **copy** command. The path name for the file may be the full pathname or the relative pathname. If no path is specified, the file is created in the current working directory. If you are not in the directory in which the phrase to be added is stored, give the full path name for the talkfile and the source file. If the phrase already exists, the system displays the following message:

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Phrase <*phrase number*> already exists in talkfile

Note: The add command adds a phrase to the SPEECHDIR default directory, which is **/home2/vfs/talkfiles**. To add a phrase, the conventional naming scheme must be followed.

Files

/speech/talk/*.pl

Examples

The following example adds phrase number 275 to talkfile 25 from the phrase stored in the UNIX file phr275 in the directory **/tmp/junk**.

add phrase 275 to talkfile 25 from /tmp/junk/phr275

The following example adds phrase 104 to talkfile 18 from the phrase stored in the UNIX file phr104 in the directory **/speech/talk**.

add phrase 104 to talkfile 18 from /speech/talk/phr104

See Also

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addhdr

The **addhdr** command adds a voice or code header to a speech file (SSP only).

Synopsis

addhdr [voice/pcm64/adpcm32/adpcm16/sbc24/sbc16/celp16] [tag]

Description

The **addhdr** command is a filter that adds a header to a speech file. Two mutually exclusive types of headers are supported: voice and code. A voice header identifies a file as being editable, and includes an optional identifying tag. A code header (which can be PCM64, ADPCM32, ADPCM16, SBC24, SBC16, or CELP16) identifies the way in which the file is encoded. Code headers are required on any file that is to be played on the voice system.

Before converting between voice and code headers, you must strip off any

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alarm_cutoff

The **alarm_cutoff** command disables the buzzer on the TAM unit.

Synopsis

alarm_cutoff

There are no arguments for this command.

Description

The **alarm_cutoff** command disables the buzzer on the TAM unit.

annotate

The **annotate** command annotates the transaction state machine (TSM) trace stream with a message.

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Description

The **annotate** command sends a message to TSM requesting that the given message be put into TSM's trace stream. This command is useful for testing and debugging scripts.

If a channel is specified, the message is associated with the channel's trace stream. The message must be fewer than 160 characters.

The **annotate** trace message is displayed in the trace output if a trace is running when the **annotate** command is executed. If no **trace** command is running, the annotate trace message is discarded.

Files

/vs/bin/tools

Example

The following example sends a message to TSM to put the message "This is test 1 for channel 1" in channel one's trace stream.

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Synopsis

assign card <*card* [.port]> to [eqpgrp] <*group number*> [grpname]

assign channel <*number*> to [eqpgrp] <*group number*> [grpname]

Description

The **assign card/channel** command is used when a system is installed, the number of channels or cards changes, scripts are added or deleted, telephone numbers change, or the user wants to reconfigure the system. The system uses the card and channel assignments to route an incoming call to the group.

The parameters that can be used with the **assign card/channel** command are:

- ***number*** — The channel number (a single card or channel number, a range of card or channel numbers specified m–n, or the word “all’ for all card or channel numbers)
- **eqpgrp** — The “eqpgrp” when assigning to an equipment group

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Examples

The following example assigns channels 0 through 47 to equipment group 1.

assign chan 0-47 to eqpgrp 1

See Also

assign service/startup

display eqpgrp/group

delete eqpgrp

assign_permissions

The **assign_permissions** command assigns voice system security permissions to a user.

Synopsis

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system that the user can access. See Chapter 2, UNIX Administration , for more information on creating user logins.

The *user login* argument represents the user who is to be assigned security permissions.

The *permissions level* argument is the specific security class permission to be assigned. The security classes are as follows:

- Administration

  Allows the user full voice system capabilities

- Applications

  Allows the user Script Builder, configuration management, reports administration, and system monitor capabilities

- Operations

  Allows configuration management, reports administration, and system monitor capabilities

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See Also

unassign_permissions
display_permissions

assign service/startup

The **assign service**/**startup** command assigns an installed service to DNIS and ANI numbers or directly to a channel.

Synopsis

assign service <*service_name*> [startup <*startup_name*>] to chan <*chan_list*>

assign service <*service_name*> to dnis <*phone_list*> [ani <*phone_list*>]

assign service <*service_name*> to ani <*phone_list*> [dnis <*phone_list*>]

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The *chan_list* variable indicates channel numbers or channel number ranges in the form *chan1-chan2*. A comma or space should be used to separate channel numbers in the list of channel numbers or ranges.

The *phone_list* variable indicates telephone numbers or telephone number ranges in the form *phone1:phone2*. A comma or space should be used to separate the list of telephone numbers or ranges (for example, **phone1:phone2**).

Examples

The following example assigns service stdin ("standard in" as an arbitrary name for a script) to channel 0.

assign service stdin to chan 0

The following example assigns service stdout ("standard out" as an arbitrary name for a script) to channel 1.

assign service stdout to chan 1

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The following example assigns the service stdout and startup service stdin to channels 4 through 7.

assign startup stdin service stdout to chan 4-7

The following example assigns the service stdout to DNIS 5000 through 5008 and ANI any.

assign service stdout to dnis 5000:5008

The following example assigns the service stdout to DNIS 5000 through 5008 and ANI 6000.

assign service stdout to dnis 5000:5008 ani 6000

The following example assigns the service stdout to DNIS any and ANI 6000 through 9000.

assign service stdout to ani 6000:9000

The following example assigns the service stdout to DNIS 3000 and ANI 2000-3000.

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attach

The **attach** command attaches a unit (card).

Synopsis

attach *unit number* [-i] [-n]

Description

The **attach** command is used to attach a card that has been “detached.” Use the attach command to allow the voice system to use a card that has just been replaced by hot swapping (that is, like-for-like replacement).

To put the card into service, use the **restore** command.

The parameters for the **attach** command are:

- *unit* — This option identifies the unit; the choices are “channel” or “card.”
- *number* — This option specifies the channel or card number, a range of

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- **-n** — This option disables prompting from the system whether to wait until a conflict has been resolved (see the **-i** option below) or to terminate the request to **attach**.
- **-i** — This option is used to enable secondary command registration. If T1 diagnostics are being run, this option allows the “attaching” of another card. If **-i** is used and another maintenance command is being run (**remove**, **detach**, **attach**, **restore**, or **diagnose**), the request to **attach** is blocked and a message is printed to the screen. If **-i** is not used and any maintenance command is being run, the request to **attach** is blocked and a message is printed to the screen.

  If the command is permitted to run, it is determined if the command is in conflict with another command. A command is in conflict if the card or card associated with the command meets any of the following conditions:

  ~ T1 card is being diagnosed

  ~ An interdependency exists with the T1 card being diagnosed (for example, PRI)

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Examples

The following example attaches a card 2.

attach card 2

The following example attaches port 1 of card 2.

attach card 2.1

The following example attaches a card to channel 2, port 1.

attach card 2.1

See Also

detach
restore
remove

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Synopsis

autoreboot [enable|disable] [reboots <*numbers*>] [window <*minutes*>] [uptime <*minutes*>]

autoreboot [status|s]

autoreboot [help|h]

Description

The **autoreboot** command can be used to change parameters associated with the auto-reboot feature and to monitor the status of these parameters. The following options are recognized:

- **enable|disable** — This option specifies whether to enable or disable the autoreboot feature. The default is enable.
- **reboots <*number*>** — This option specifies the number of unanticipated reboots tolerated within the time period specified by *window*. The default is 5.

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- **uptime <*minutes*>** — This option specifies the amount of time that the system must be in service before the automatic reboot feature is activated. The default is 5 minutes.
- **status** — This option shows the current values of the automatic reboot parameters, plus the number of unanticipated reboots that occurred in the *window* minutes preceding the most recent system boot.

When the auto-reboot feature is enabled and activated, the system automatically reboots after a UNIX panic. The auto-reboot feature is activated as follows:

If there were fewer *reboots* than unanticipated reboots during the *window* minutes prior to the most recent system boot, the automatic reboot feature is activated (if enabled) *uptime* minutes after the most recent system boot.

For example, assume the automatic reboot parameters are set to their default values. A system crash occurs. The system reboots at 8:00. If there were fewer than five unanticipated reboots between 7:00 and 8:00, the auto-reboot feature is activated as 8:05. Otherwise, it is activated at 9:00.

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Example

The following example enables autoreboot feature and changes *window* to two hours:

autoreboot enable window 120

Caveat

This command must be run from ksh (KORN shell).

bbs

The **bbs** command reports status of the voice system Bulletin Board (BB).

Synopsis

bbs ***[-d] [-h] [-l]***

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Description

- ***-h***— Prints information about the hardcoded portion of the BB.
- ***-l*** — Generates a long listing. The system displays all fields.

The column headings and meaning of the columns in the **bbs** listing are given in Table 28 on page 388. In the table, the letter **l** indicates the **long** option, which causes the corresponding heading to appear. The **all** option means that the heading always appears.

Table 28. bbs Column Headings

Column Name	Option	Description
SLT	(all)	The slot number
BBNAME	(all)	The name associated with the process and slot
QKY	(all)	The message queue key
PID	(all)	The process ID

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Table 28. bbs Column Headings

Column Name	Option	Description
SKEY	(l)	The semaphore key associated with the process and slot
QID	(l)	The message queue ID
RE-SPA	(l)	The number of respawns from the last restart of the voice system
WKCNT	(l)	The ET work count for process

Upon successful completion, **bbs** returns an exit status of zero. Otherwise, **bbs** prints an error message on *stderr* and returns a nonzero exit status if the voice system is not running, or if for some other reason it can not access the BB.

Example

The following example prints a long listing, displaying all possible fields

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ccarpt

The **ccarpt** command generates a call classification data summary report.

Synopsis

ccarpt *<date>*

ccarpt *<start_date>* *<end_date>*

Description

The **ccarpt** command generates a call classification data summary report. This report is stored in standard out (stdout).

The ***<date>***, ***<start_date>***, and ***<end_date>*** arguments may be in the form mm/dd/yy or mm/dd/yyyy.

If a 2-digit year argument is used, the following rules apply:

- If the year argument is 70 and above, the 20th century is assumed, For

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Examples

The following two examples generate the call classification data summary report for October 10, 1993, and are equivalent command statements.

ccarpt 10/20/93

ccarpt 10/20/1993

The following two examples generate the call classification data summary report from October 14 through October 20, 1993, and are equivalent command statements.

ccarpt 10/14/93 10/20/93

ccarpt 10/20/1993 10/20/1993

cddrpt

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The **cddrpt** command generates a call data detail report

Description

The **cddrpt** command generates the call data detail report. This report is sent to standard out (stdout). Before this can be done, the database system must be up and running, but the voice system does not need to be up.

The parameters for the **cddrpt** command are:

- ***<records>*** — This parameter represents the number of records to be reported. It can be any number, a range of numbers, or **all** indicating all records in the system.
- ***<service>*** — This parameter represents the script (application) name, or **all** for all applications.
- ***<calldata>*** — This parameter represents a flag indicating whether to include call event data. The valid options are **n** for not including event data or **y** for including event data.
- ***<date>*** — This parameter is the date the data was collected in the system. The valid options are either a date in mm/dd/yy format, mm/dd/yyyy format, or **all** indicating all records in the system.

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Examples

The following two examples generate a call data detail report for the first 100 pieces of call data collected on date October 20, 1993 for application “balance_chk” and are equivalent command statements. (Call event data, if any, is also included in the report.)

cddrpt 100 balance_chk y all 10/20/93

cddrpt 100 balance_chk y all 10/20/1993

The following example generates a call data detail report for all call data in the system without including call event data.

cddrpt all all n all

Error Messages

CANNOT FIND /vs/trans/<*application*>.D OR MALLOC SPACE FOR IT

If you get the above message while running **cddrpt**, take the following remedial steps:

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cdsrpt

The **cdsrpt** command generates a call data summary report for a specific date.

Synopsis

cdsrpt <*hours*> <*service*> <*event data*> <*date*>

Description

The **cdsrpt** command generates the call data summary report for a date specified. The report is stored in standard out (stdout). Before this can be done, the database system must be up and running, but the voice system does not need to be up.

The parameters for the **cdsrpt** command are:

- ***<hours>*** — This parameter is the hour the call data was collected. It can be any number between 0 to 24 or “all” indicating all 24 hours.

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- ***<date>*** — This parameter is the date the data was collected in the system in the format mm/dd/yy or mm/dd/yyyy.

  If a 2-digit year argument is used, the following rules apply:

  ~ If the year argument is 70 and above, the 20th century is assumed. For example, 5/27/96 is interpreted as May 27, 1996.

  ~ If the year argument is between 00 and 69, the 21st century is assumed. For example, 5/27/06 is interpreted as May 27, 2006.

Examples

The following two examples generate a call data summary report for call data collected between 2 p.m. and 4 p.m. on date October 20, 1993 for all applications on the system, and are equivalent command statements. Call event summary is included in the report.

cdsrpt 14-16 all y 10/20/93

cdsrpt 14-16 all y 10/20/1993

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Error Messages

```
CANNOT FIND /vs/trans/<application>.D OR MALLOC SPACE FOR IT
```

If you get the above message while running **cdsrpt**, take the following remedial steps:

- Make certain the **/vs/trans/*<application>*.D** file exits and is current.
- Remove unnecessary files from the **/vs/trans/** directory.

codetype

The **codetype** command identifies the type of coding header in a speech file (SSP only).

Synopsis

codetype file

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See Also

addhdr
striphdr

configure_tam

The **configure_tam** command is used to download the configuration file for the TAM unit.

Syntax

configure_tam

There are no arguments for this command.

Description

The **configure_tam** command downloads the configuration file for the TAM unit. The configuration settings are saved and used as the active TAM

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copy

The **copy** command copies a phrase from a UNIX talkfile to a UNIX talkfile (SSP only).

Synopsis

copy phrase <*phrase number*> from talkfile <*talkfile number*> to <*filename*>

Description

The **copy** phrase command copies a phrase from one UNIX talkfile to another UNIX talkfile. The path name for the file may be the full path name or the relative path name. If no path is specified, the file is created in the current working directory. If you are not in the directory in which the phrase to be added is stored, be sure to give the full path name for the talkfile and source file.

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Note Only the login root can copy a phrase to any of the root

Examples

The following example copies phrase number 2 from talkfile 1 to the file **/speech/talk/a.1**.

copy phrase 2 from talkfile 1 to /speech/talk/a.1

The following example copies phrase number 174 from talkfile 25 to the file **/speech/talk/h.4**.

copy phrase 174 from talkfile 25 to /speech/talk/h.4

See Also

add
erase
list

cpuType

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Description

The **cputype** command returns the type of CPU on the system, either a 386 or a 486. If the **cputype** command returns a 3, you are using a 386. If the *cpuType* command returns a 4, you are using a 486. To determine the return value, examine the shell variable $?.

cvis_mainmenu

The **cvis_mainmenu** command accesses the administration menus.

Synopsis

cvis_mainmenu

Description

The **cvis_mainmenu** program is a menu interface used to access the Administration menu. See the Chapter 3, Voice System Administration , for

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cvis_menu

The **cvis_menu** command accesses the Voice System Administration menu.

Synopsis

cvis_menu

Description

This command provides access to the Voice System Administration menu.

See Also

cvis_mainmenu

dbcheck

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The **dbcheck** command checks the resources available in the database

Synopsis

dbcheck -i

dbcheck r

dbcheck *[w n[,m]] [-s] [-e] [-m user[~user...]]*

Description

The **dbcheck** command checks spaces, usage, and rollback segment growth. The **dbcheck** command has three different usages.

The *-i* option installs cron entries (optional) to run **dbcheck** at regular intervals and support for logger/alerter messages. (The *-i* option only needs to run once). The cron job can be placed in either roots cron file or added to the end of the **/vs/bin/util/croncdh** job that runs once a day. The *-i* option also asks if you want new alerter messages added to the logger/alerter database along with explanations used with the *explain* command. This installation only needs to be run if you want the warnings to show up in the system event log or if you want to schedule automatic checking at regular

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The third usage actually checks database space against a user set “water marks.” Three different things are checked:

- Free space
- Extents against the user set threshold *n* (15% default)
- Rollback segment(s) growth against the user set threshold *m* (20% default)

When executed, the **dbcheck** command generates the appropriate warnings (shown under “Diagnostics” below) if the database falls below *n* percent free or if the rollback segment grows to be more than *m* percent of the total database size.

The **dbcheck** command, by default, sends warning messages to the logger/alerter indicating a threshold has been exceeded (the **-i** option must be run first). The **-e** option disables the entries from going into the log file. The **-s** option prints the warning messages to standard output. The **-m** *user* option allows for the messages to be mailed to *user*. Multiple users can be sent the mail by separating the user names with a tilde (~). Below are sample outputs.

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dbcheck -w13,23

```
*   Mon Feb 15 16:35:06 1993 dbcheck logTest.c:418
DBC001    -- -- ---  Database 10 percent free, 3072 Blocks of 30720 available.
                Reason:  Low DB Space.
*    Mon Feb 15 16:35:06 1993 dbcheck logTest.c:418
DBC002     -- -- ---  Extents low, 100 used of 121, on object MY_TABLE
                Reason:  Low DB Extents
*    Mon Feb 15 16:35:06 1883 dbcheck logTest.c:418
DBC003     -- -- --- Rollback segments=7680 blocks, 25 percent of total space.
                Reason:  High Rollback Usage.
```

Files

```
LOGROOT=$[LOGROOT:-"/usr/spool/log"}
${LOGROOT}/head/logDBC.h
${LOGROOT}/formats/DBCmsg
${LOGROOT}/formats/formats.mk
${EXPLAINDR}//translateLst
/vs/bin/util/croncdh
```

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Diagnostics

The **dbcheck** command returns the following values:

0 — Success, no limits exceeded

1 — Threshold exceeded

2 — Processing error

3 — Database is not running

Caveat

Once *dbcheck* log messages are installed using **dbcheck -i**, the alarm priorities, destinations, and thresholds can not be changed through the System Message Display screen as described in Message Administration on page 67, of Chapter 3, Voice System Administration .

See Also

dbfrag

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dbfrag

The **dbfrag** command lists fragmentation information on the database (Version 7 ORACLE).

Synopsis

dbfrag [-h -b]

Description

The **dbfrag** command is a shell script that reports on database allocation, usage, and fragmentation. The block size reported is in ORACLE blocks (2048 bytes). You can request the information to be reported in Mbytes with the **-b** option. This tool is useful to get a quick check on database usage and provides a shell interface into some key ORACLE statistics.

This tool only reports on information in the SYSTEM tablespace. With the **-h** option, the listing is printed without a header. This option is useful if you want

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```
# dbfrag -b
```

SYSTEM Tablespace, Space is in Mega-Bytes

ALLOCATED	FREE	% FREE	AVG/FRAG	LARGEST	FRAGMENTS	DB_FILES	ROLLBACK
129.00	108.88	84.40	5.44	108.12	20	1	7.91

Examples

The following example gets the largest contiguous ORACLE space available.

```
dbfrag -h | awk 'length>1 {print $5}'
10240
```

Diagnostics

The program returns the following:

0 — Success

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dbfree

The **dbfree** command checks the space available in the database by partition (Version 7 ORACLE).

Synopsis

dbfree ***[h]***

Description

The **dbfree** command is a shell script that lists the amount of free space in the database by free contiguous blocks. The result is a detailed listing of each free memory area followed by the sum of each partition. The free blocks are listed in 2048 bytes/block (ORACLE blocks). There is also a column that lists the same information in megabytes. The ***-h*** option removes the column headers. Below is a sample output of the **dbfree** command.

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Contiguous extents

TABLE SPACE NAME	FILE_ID	START_BLOCK	MBYTES FREE	ORACLE BLOCKS FREE
SYSTEM	1	5142	.02	12
SYSTEM	1	5560	.03	13
SYSTEM	1	4892	.04	18
SYSTEM	1	7892	.04	19
SYSTEM	1	4164	.05	28
:	:	:	:	:
:	:	:	:	:
SYSTEM	1	5598	.73	375
SYSTEM	1	8946	4.00	2048
SYSTEM	1	12650	4.45	2277
SYSTEM	1	25179	10.00	5120
SYSTEM	1	14939	20.00	10240
sum			47.18	24070

29 rows selected.

Diagnostics

The program returns the following values:

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Caveats

The **dbfree** command creates a temporary table “dba_fragments” under user system that compresses the adjacent entries provided by the dictionary view “dba_free_space.”

See Also

dbfrag
dbcheck
dbused

dbused

The **dbused** command provides database use by oracle user (Version 7 ORACLE).

Synopsis

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the entire database. The ***-h*** option skips the header message. This option is useful if you are parsing. The ***-u <uid/passwd>*** option allows the user to specify the oracle user id and password (the default is sti/sti, all for all users).

Below is an output summary for user “all.”

 # dbused -su all

Space allocated to objects. Oracle blocks (2048 Bytes/Block)

NAME	TYPE	BLOCKS	MBYTES	EXTENTS	MAX_EXTENTS
C1	INDEX	5	.01	1	99
CCA	TABLE	5	.01	1	99
CCASUM	TABLE	5	.01	1	99
CDH	TABLE	5	.01	1	99
CDHSUM	TABLE	5	.01	1	99
E2	TABLE	5	.01	1	99
EVENTS	TABLE	5	.01	1	99
EVSUM	TABLE	5	.01	1	99
LDBCOLS	TABLE	5	.01	1	99

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dbused

Space allocated to objects. Oracle blocks (2048 Bytes/Block)

NAME	TYPE	BLOCKS	MBYTES	EXTENTS	MAX_EXTENTS
C1	INDEX	5	.01	1	99
CCA	TABLE	5	.01	1	99
CCASUM	TABLE	5	.01	1	99
CDH	TABLE	5	.01	1	99
CDHSUM	TABLE	5	.01	1	99
E2	TABLE	5	.01	1	99
EVENTS	TABLE	5	.01	1	99
EVSUM	TABLE	5	.01	1	99
LDBCOLS	TABLE	5	.01	1	99

Diagnostics

The program returns the following values:

0 - Success

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decode

The **decode** command converts adpcm16 or adpcm32 files to pcm64 files (SSP only).

Synopsis

decode [adpcm32/adpcm16]

Description

Decode is a filter that converts ADPCM16 or ADPCM32 files to PCM64 files.

Warning

Coding headers should be stripped (using the **stripdhr** command) before running **decode**.

See Also

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defService

The **defService** command defines an IRAPI service.

Synopsis

defService ***[-h] [-n] [-s <servicename>] [-p <process>] [-t P | T] [-a 0 |1 |2 |3 |4] [<application>]***

Description

The **defService** command is for use by IRAPI application developers. It creates the registration file for an IRAPI service that is necessary for assigning or deleting service to or from a channel or DNIS and/or ANI. For TSM scripts, the output of the **tas** command serves as the registration file for the script.

If the **defService** command is entered with no options, **defService** prompts you for all of the necessary information. You will need to respond to fewer

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When the application is started by the Application Dispatch (AD) process, the **IRP_SERVICE_NAME** is set to the ***-s <servicename>*** argument if ***<servicename>*** is non-NULL. Otherwise, **IRP_SERVICE_NAME** is set to ***<application>***, where the default is **NULL**.

The ***-t*** option specifies whether the process that provides the IRAPI application ***<application>*** is a permanent (P) or transient (T) process. The default is **P** for permanent.

If the process that provides the IRAPI application ***<application>*** is a permanent process, then ***-p <process>*** must be the name the process uses as an argument to ***irRegister(3irAPI)***. If the process that provides the IRAPI application ***<application>*** is a transient process, then ***-p <process>*** must be the full pathname of the process. No default exists for this option.

When the application is executed on a PRI line, the ***[-a 0 |1 |2 |3 |4]*** option specifies how the ANI should be supplied to the application. The valid values for this option are as follows:

- 0 — No ANI supplied; the default

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The ***<application>*** argument specifies the IRAPI application. No default exists for this argument.

Upon successful completion, the **defService** command creates the **/vs/trans/<*application*>.T** file.

Files

/vs/trans/*.T

See Also

assign
delete
tas
iRAPI -AD(4irAPI-AD)
irRegister(3irAPI)

delete card/channel

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Synopsis

delete card <*card.[port]*> from *[eqpgrp]* <*group number*>

delete channel <*number*> from *[eqpgrp]* <*group number*>

Description

The **delete card/channel** command removes the specified card or channel from a service or equipment group. The parameters for the delete card/channel command are:

- ***<card.[port]>*** — Specifies the card or channel number (a single card or channel number from a range of 0–255, a range of card or channel numbers in the form *m–n*, or the word **all** for all card or channel numbers).
- **eqpgrp** — Specifies “svcgrp” when deleting from a service group or “eqpgrp” when deleting from an equipment group. If no group type is given, the “svcgrp” is assumed.
- ***<group number>*** — Identifies the equipment group or service group.

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Examples

The following example deletes card 4 from service group 1.

delete card 4 from svcgrp 1

The following example deletes channels 10 through 13 from equipment group 3.

delete channel 10-13 from eqpgrp 3

See Also

delete eqpgrp
delete service

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delete eqpgrp

The **delete eqpgrp** command removes an equipment group.

Synopsis

delete eqpgrp <*group number*>

Description

The **delete eqpgrp** removes an equipment group. The ***<group number>*** argument is the equipment group list. To remove all equipment groups, use “all” as the group number.

Examples

The following example removes equipment group number 3.

```
delete eqpgrp 3
```

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The following example removes all equipment groups.

delete service/startup

The **delete service/startup** command unassigns the assignment of a service to DNIS and ANI numbers or of a service assigned directly to a channel.

Synopsis

delete service <*service_name*> [startup <*startup_name*>] from chan <*chan_list*>

delete startup <*startup_name*> [service <*service_name*>] from chan <*chan_list*>

delete service <*service_name*> from dnis <*phone_list*> [ani <*phone_list*>]

delete service <*service_name*> from ani <*phone_list*> [dnis <*phone_list*>]

Description

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- ***<chan number | phone number>*** — Contains a list of one or more channels or telephone numbers separated by blanks. The word “any” or “all” shows that service is removed from all calls regardless of what number was dialed.

The *chan_list* variable indicates channel numbers or channel number ranges in the form *chan1-chan2*. Use a comma or space to separate the list of channel numbers or ranges.

The *phone_list* variable indicates telephone numbers or telephone number ranges in the form *phone1:phone2*. Use a comma or space to separate the list of telephone numbers or ranges.

Note: Only telephone numbers that were assigned using the assign service/startup command can be deleted.

Examples

The following example deletes startup service stdout from channels 4 through 7.

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The following example deletes the service stdout to DNIS 5000 through 5008 and ANI any.

delete service stdout from dnis 5000:5008 and ANI any

The following example deletes the service stdout from DNIS 5000 through 5008 and ANI 6000.

delete service stdout from dnis 5000:5008 ani 6000

The following example deletes the service stdout from DNIS any and ANI 6000 through 9000.

delete service stdout from DNIS any and ani 6000:9000

The following example deletes the service stdout from DNIS 3000 and ANI 2000-3000.

delete service stdout from dnis 3000 ani 2000:3000

See Also

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detach

The **detach** command places a card or channel in the NONEX state. If a card is detached, it can then be replaced by hot swapping (that is, like-for-like replacement). The blue LED indicates that is ready to be removed from the system.

Synopsis

detach ***unit number [-i] [-n]***

Description

The **detach** command places a unit currently in the manual-out-of-service (MANOOS) state into the nonexistent (NONEX) state. Before this can be done, the unit must be taken from the in-service (INSERV) or broken (BROKEN) state and put in the MANOOS state using the **remove** command.

The parameters for the **detach** command are:

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- ***-n*** — This optional parameter disables prompting from the system whether to wait until a conflict has been resolved (see the ***-i*** option below) or to terminate the request to detach.
- ***-i*** — This optional parameter is used to enable secondary command registration. If T1 diagnostics are being run, this option allows the "detaching" of another card. If ***-i*** is used and another maintenance command is being run (**remove**, **detach**, **attach**, **restore**, **diagnose**), the request to **detach** is blocked and a message is printed to the screen. If ***-i*** is not used and any maintenance command is being run, the request to **detach** is blocked and a message is printed to the screen.

  If the command is permitted to run, a check is made to see if the command is in conflict with another. A command is in conflict if the card or card associated with it:

  ~ Is the T1 card being diagnosed
  ~ Will cause a change in the existing TDM bus master assignment
  ~ Has an interdependency with the T1 card being diagnosed (for

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Examples

The following example detaches card 4 and places it in the NONEX state as far as the system is concerned.

detach card 4

The following example detaches channels 1 through 3 and places them in the NONEX state as far as the system is concerned.

detach channel 1-3

See Also

attach
remove
restore

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diagnose bus 1

The **diagnose bus 1** command tests a bus while it is in service.

Synopsis

diagnose bus *1*

Description

The **diagnose bus** command changes the temporary state of a unit to diagnostic (DIAG). If a unit fails the diagnostics, the permanent state is changed to BROKEN; otherwise, the permanent state is unchanged.

The output is sent to the screen and also saved to a file in **/vs/data/diagnose** called **busDiag.1**.

Example

The following example diagnoses bus 1.

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diagnose card

The **diagnose card** command tests a card while it is in service.

Synopsis

diagnose card *card# [option]...*

Description

The **diagnose card** command is done at the card level for any card in the system. The *card number* option is the card number you want to diagnose. The word “all” can be used to specify all cards.

This command changes the temporary state of a unit to diagnostic (DIAG). If a card is stuck in the INSERV state, use the **diagnose card *card# immed*** command. This temporarily removes the unit from the busy state unconditionally and places it in the manual-out-of-service (MANOOS) state. Note that any calls on the card when the “immed” option is used are dropped immediately.

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- ***-i*** — Enables secondary command registration. See the description of ***-i*** for LSPS/SSP cards below.

For LSPS/SSP cards, the valid options are:

- ***-n*** — Disables prompting from the system whether to wait until a conflict has been resolved (see the ***-i*** option) or to terminate the request to diagnose.
- ***-i*** — Enables secondary command registration. If T1 diagnostics are being run, this option allows another card to be diagnosed. If ***-i*** is used and another maintenance command is being run (**remove**, **detach**, **attach**, **restore**), the request to diagnose a non-T1 card is blocked and a message is printed to the screen. If ***-i*** is not used and any maintenance command is being run, the request to **diagnose card** is blocked and a message is printed to the screen.

  If the command is permitted to run, a check is made to see if the command is in conflict with another. A command is in conflict if the card or card associated with it:

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offline tests and a conflict is detected, the user is asked whether to wait until the conflict is resolved or to terminate the request to diagnose.

If a unit fails the diagnostics, the permanent state is changed to BROKEN. If the unit being diagnosed previously was marked BROKEN and it passes diagnostics, it is put in the MANOOS state. Otherwise, the permanent state is unchanged.

When diagnostics are complete, if the diagnostics passed, the T1/E1, SSP, and LSPS cards are reinitialized.

If an SSP card passes diagnostics, the system displays a message similar to the following:

```
Diagnose <card> n, Passed.
```

If a T1 card passes diagnostics, the system displays a message similar to the following:

```
All tests passed.
```

If a T1 card fails diagnostics, a help screen is provided giving you information

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diagnostic routine. If, while running diagnose, you want to stop the command, a message similar to the following may appear:

```
Aborting request.  Further administrative action may be
needed to reach desired state.
```

```
The diagnostics command for board board number has been
stopped.
```

The card will be marked as BROKEN.

Or, the system may display:

```
Could not stop diagnostics for board board number.
```

The diagnostics may continue to run in the background. Use the **display** command to check the state of the card.

Examples

The following example runs diagnostics on card number 3.

diagnose card 3

The following example runs diagnostics on cards 4 through 7.

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dip_int

The **dip_int** command sends DIP interrupt to a script on a channel or a range of channels.

Synopsis

dip_int *channel*

dip_int *channelStart-channelEnd*

Description

The **dip_int** command sends a message or messages to TSM requesting that TSM send interrupt messages to the script running on *channel* or the range of channels *channelStart-channelEnd*. If no script is running on the channel or if TSM does not own the channel, no action is taken for the channel. The **dip_int** command does not wait for a response from TSM. Scripts running on the channel receive the EDIPINT event.

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Examples

The following example requests that TSM send interrupt messages to channel two.

dip_int 2

The following example requests that TSM send interrupt messages on channels one through 32.

dip_int 1-32

Return Values

If the **dip_int** is successful, a 0 value is returned. If any value other than 0 is returned, the **dip_int** command completely or partially failed.

If **dip_int** returns a value of 2, then **dip_int** failed due to temporary condition. In this case, the user should attempt the **dip_int** command again.

See Also

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display assignments

The **display assignments** command displays the services assigned to channels.

Synopsis

disp assignments ***[option] [option]***

Description

The **display assignments** command is used to display all the services and startup services assigned to channels. The display assignments command options are shown in Table 29:

Table 29. display assignments Command Options

Option	Description
all (default)	Displays information on all services

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Table 29. display assignments Command Options

Option	Description
startup *startup name*	Displays channels assigned with a specific startup service
channel *chan#*	Displays assignments for the channel specified by *chan#.* A range of channels can be specified.

Note: If more than one option is used, the system displays only channels that satisfy all the options given. If an invalid combination of options is given, the system displays an error message.

Examples

The following example displays information for channel 1

disp assignments channel 1

The following example displays information for all channels that have the

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display card

The **display card** command displays information about specified cards.

Synopsis

disp[lay] card ***[option [option]]***

Description

The **display card** command displays data about a specified card or about cards in a specified state. In the output, the physical slot number, the osindex, and the voice system card number are all the same. The output also correctly reflects which card is primary master, which is secondary master, and which cards are slave.

The display card command options are:

- ***card# port#*** — Displays information on card *card#* and on port *port#* of the specified card. All ports are shown if *port#* is not given. A range of

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- **mtc** — Displays all cards being used by the maintenance process.
- **manoos** — Displays all cards in the manual out-of-service state.
- **broken** — Displays all cards in the broken state.
- **ins[erv]** — Displays all cards that have at least one channel in the in-service state.
- **netoos** — Displays all cards that have at least one channel in the network out-of-service state.
- **hwoos** — Displays all cards that have at least one channel in the hardware out-of-service state.
- **foos** — Displays all cards that have at least one channel in the facility out-of-service state.

If more than one option is used, only cards that satisfy all the options given are displayed. If an invalid combination of options is given, the system displays an error message.

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Sample output:

```
CARD  4   STATE: Manoos    CLASS: Signal_Processor(SSP)  O.S.INDEX:  4
   NAME:  CWB1      OPTIONS: slave,tdm1
   FUNCTION: play+code


CARD  6   STATE: Manoos    CLASS: Digital(T1)           O.S.INDEX:  6
   NAME:  CWB2      OPTIONS: primary_master,tdm1
   FUNCTION: E&M

CD.PT CHN STATE   STATE-CHNG-TIME  SERVICE-NAME PHONE   GROUP   OPTS TYPE
6.0    0 Manoos  Mar 24 11:26:02  feature_tst  -       2       tdm  T1.5
6.1    1 Manoos  Mar 24 11:26:02  feature_tst  -       2       tdm  T1.5
6.2    2 Manoos  Mar 24 11:26:02  feature_tst  -       2       tdm  T1.5
6.3    3 Manoos  Mar 24 11:26:02  feature_tst  -       2       tdm  T1.5
6.4    4 Manoos  Mar 24 11:26:02  feature_tst  -       2       tdm  T1.5
6.5    5 Manoos  Mar 24 11:26:02  feature_tst  -       2       tdm  T1.5
6.6    6 Manoos  Mar 24 11:26:02  feature_tst  -       2       tdm  T1.5
6.7    7 Manoos  Mar 24 11:26:02  feature_tst  -       2       tdm  T1.5
6.8    8 Manoos  Mar 24 11:26:02  feature_tst  -       2       tdm  T1.5
```

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```
6.17  17 Manoos  Mar 24 11:26:02  feature_tst  -     2       tdm  T1.5
6.18  18 Manoos  Mar 24 11:26:02  feature_tst  -     2       tdm  T1.5
6.19  19 Manoos  Mar 24 11:26:02  feature_tst  -     2       tdm  T1.5
6.20  20 Manoos  Mar 24 11:26:03  feature_tst  -     2       tdm  T1.5
6.21  21 Manoos  Mar 24 11:26:03  feature_tst  -     2       tdm  T1.5
6.22  22 Manoos  Mar 24 11:26:03  feature_tst  -     2       tdm  T1.5
6.23  23 Manoos  Mar 24 11:26:03  feature_tst  -     2       tdm  T1.5


CARD 13   STATE: Manoos    CLASS: Signal_Processor(SSP)  O.S.INDEX: 13
   NAME:  CWB1      OPTIONS: slave,tdm1
   FUNCTION: play+code


CARD 15   STATE: Manoos    CLASS: Digital(T1)            O.S.INDEX: 15
   NAME:  CWB2      OPTIONS: slave,tdm1
   FUNCTION: E&M

CD.PT CHN STATE   STATE-CHNG-TIME  SERVICE-NAME PHONE   GROUP   OPTS TYPE
15.0   24 Manoos  Mar 24 11:26:15  feature_tst  -       2       tdm  T1.5
15.1   25 Manoos  Mar 24 11:26:15  feature_tst  -       2       tdm  T1.5
```

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```
15.10  34 Manoos  Mar 24 11:26:16  feature_tst  -      2       tdm  T1.5
15.11  35 Manoos  Mar 24 11:26:16  feature_tst  -      2       tdm  T1.5
15.12  36 Manoos  Mar 24 11:26:16  feature_tst  -      2       tdm  T1.5
15.13  37 Manoos  Mar 24 11:26:16  feature_tst  -      2       tdm  T1.5
15.14  38 Manoos  Mar 24 11:26:16  feature_tst  -      2       tdm  T1.5
15.15  39 Manoos  Mar 24 11:26:16  feature_tst  -      2       tdm  T1.5
15.16  40 Manoos  Mar 24 11:26:16  feature_tst  -      2       tdm  T1.5
15.17  41 Manoos  Mar 24 11:26:16  feature_tst  -      2       tdm  T1.5
15.18  42 Manoos  Mar 24 11:26:16  feature_tst  -      2       tdm  T1.5
15.19  43 Manoos  Mar 24 11:26:16  feature_tst  -      2       tdm  T1.5
15.20  44 Manoos  Mar 24 11:26:16  feature_tst  -      2       tdm  T1.5
15.21  45 Manoos  Mar 24 11:26:16  feature_tst  -      2       tdm  T1.5
15.22  46 Manoos  Mar 24 11:26:16  feature_tst  -      2       tdm  T1.5
15.23  47 Manoos  Mar 24 11:26:16  feature_tst  -      2       tdm  T1.5


CARD 16   STATE: Manoos    CLASS: Digital(T1)           O.S.INDEX: 16
   NAME:  CWB2       OPTIONS: secondary_master,tdm1
   FUNCTION: E&M

 CD.PT  CHN  STATE    STATE-CHNG-TIME  SERVICE-NAME PHONE   GROUP   OPTS TYPE
```

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```
16.8   56 Manoos  Mar 24 11:26:09  feature_tst  -       2       tdm  T1.5
16.9   57 Manoos  Mar 24 11:26:09  feature_tst  -       2       tdm  T1.5
16.10  58 Manoos  Mar 24 11:26:09  feature_tst  -      2       tdm  T1.5
16.11  59 Manoos  Mar 24 11:26:09  feature_tst  -      2       tdm  T1.5
16.12  60 Manoos  Mar 24 11:26:09  feature_tst  -      2       tdm  T1.5
16.13  61 Manoos  Mar 24 11:26:09  feature_tst  -      2       tdm  T1.5
16.14  62 Manoos  Mar 24 11:26:09  feature_tst  -      2       tdm  T1.5
16.15  63 Manoos  Mar 24 11:26:09  feature_tst  -      2       tdm  T1.5
16.16  64 Manoos  Mar 24 11:26:09  feature_tst  -      2       tdm  T1.5
16.17  65 Manoos  Mar 24 11:26:09  feature_tst  -      2       tdm  T1.5
16.18  66 Manoos  Mar 24 11:26:09  feature_tst  -      2       tdm  T1.5
16.19  67 Manoos  Mar 24 11:26:09  feature_tst  -      2       tdm  T1.5
16.20  68 Manoos  Mar 24 11:26:09  feature_tst  -      2       tdm  T1.5
16.21  69 Manoos  Mar 24 11:26:09  feature_tst  -       2       tdm  T1.5
16.22  70 Manoos  Mar 24 11:26:09  feature_tst  -       2       tdm  T1.5
16.23  71 Manoos  Mar 24 11:26:09  feature_tst  -         2       tdm  T1.5
```

The following example displays information on all cards in the “Mtc” state.

disp card mtc

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display channel

The **display channel** command displays channel information.

Synopsis

disp[lay] channel *option [option]*

disp chan *option [option]*

Description

The **display channel** command is used to list information at the channel level. The **display channel** command options are:

- **number** — Displays information on the channel specified by channel number. A range of channels may be specified in the form m–n.
- **all** — Displays information on all channels.
- **mtc** — Displays all channels being used by the maintenance process.

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- **t1** —This options displays all channels assigned on T1 cards.
- **sp** — This options displays all channels assigned to SSP service.
- **netoos** — This options displays all channels assigned to network service.
- **hwoos** — This options displays all channels assigned to hardware service.
- **foos** — This options displays all channels assigned to facility service.

If more than one option is used, the system displays only channels that satisfy all the options given. If an invalid combination of options is given, the system displays an error message.

Examples

The following example displays information for channel 1.

disp channel 1

The following example displays information all channels being used by the

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display dnis

The **display dnis** command displays the services assigned to DNIS and ANI numbers.

Synopsis

disp dnis

Description

The **display dnis** command is used to display all the services assigned to DNIS and ANI numbers.

Example

The following example displays information for all the services assigned to DNIS and ANI numbers:

disp dnis

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display eqpgrp/group

The **display eqpgrp/group** command displays an equipment group report.

Synopsis

disp eqpgrp ***group number***

disp group ***group number***

Description

The **display eqpgrp** command is used to list all the equipment assigned to the specified equipment group. The *group number* is the number of the equipment group. If the group number is missing, the system displays a syntax message. If you specify "all", the system displays every equipment group.

Examples

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The following example lists all equipment assigned to all equipment groups.

disp eqpgrp all

See Also

assign card/channel

delete eqpgrp

display equipment

The **display equipment** command displays the following output:

- serial number — displayed for E1/T1, SSP, and SBC (including CPU, IO, MEML, MEMU, and VGA cards). Not available for the LSPS.
- vintage — displayed for E1/T1 and SSP.
- suffix — displayed for E1/T1 and SSP.

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Synopsis

display messages
***[*priority *<alarms, critical, '*C', major, '**',minor, '*',events, all>]* [-c]**

[start <mm/dd HH:MM:SS>]
[stop <mm/dd HH:MM:SS>]
[card <range,T1,TR,SP,...,all>]
[channel <range,T1,TR,SP,...,all>]
[ID <message ID1,message ID2,all>]
[source <TSM,VROP,SPIP,TRIP,...,all>]
[pattern <regular expression search pattern>]
[number,all]

Description

The **display messages** command displays error and status messages that have been logged by the voice system. Various options are provided so that the display can be limited to specific types of messages. If no arguments are supplied to **display messages**, information is displayed on how to read the

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The *priority* argument should be used to display messages with specific types of urgencies. Two groups of priorities exist: alarms and events. Alarms are messages that have been reported as *C (critical), ** (major), or * (minor) priorities. Events are all the remaining messages that have no priority, for example, status messages. For example, to display the last 100 alarms, type the following:

display messages priority alarms 100

You can also display specific priorities using the *priority* option. You can specify either the name of the priority or its symbol (for example, **critical** or ***C**) To display all of the critical messages, type the following:

display messages priority critical all

Note: You should use the **priority alarm** argument when alarms are needed, otherwise use the **priority events** argument. The priority argument must be used with this command.

Combinations of priorities can also be displayed by listing each priority separated with a comma. For example, to display the last 100 alarms

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Display Message Options

To display only specific types of messages, you may precede the number of messages to be displayed with one or more of the following options:

- ***start***
- ***stop***
- ***card***
- ***channel***
- ***id***
- ***source***
- ***pattern***
- ***number***

If more than one of the options is specified, the system displays only messages that meet all of the specifications.

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start

- “05/01/93”
- “05-01-93”

Examples of specifying the time are:

- hh:mm:ss
- hour=hh
- min=mm
- sec=ss

  where hh is 0 to 23, and mm and ss can be 0 to 59.

DO NOT mix the hh:mm:ss format with the item==xx format. If portions of the time are not specified, the time default is 0 hours, 0 minutes, and 0 seconds.

Also, giving only the time of day indicates the current date. For example, if today is January 15, 2000, the command **display messages start “12/31 09:00”** displays all of the messages that were logged starting at 9 am on December 31, 1999. In order to display messages from a previous year, you

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stop

The *stop* option allows you to display messages logged up to a specific time. The date and time syntax is the same as that for the *start* option. Therefore, **display messages stop today** displays all messages that were logged before today.

The *start* and *stop* options can be used together to display messages that were logged over a specific period of time. For example, **display messages start “May 1” stop “May 2”** displays all messages logged on May 1 of this year.

If you want the start and stop options to be the same day (for example, May 1), you must specify the hours and minutes for which you want to display messages. Otherwise, the time defaults to 00:00 for both the start and stop options and no messages are displayed.

card

The *card* option allows you to specify messages logged about a specific card or cards. For example, **display messages card 2** displays all messages

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You can also use the *card* option to display messages logged about a specific type of card. For example, **display messages card t1** displays all messages logged about T1 cards.

channel

The *channel* option works like the *card* option. For example, **display messages channel t1** displays all messages logged about T1 channels, whereas **display messages channel 5** displays all messages logged about channel 5.

Note: The *channel* option requires an argument. Typing **display messages channel 100** attempts to display all messages pertaining to channel 100. If you want to display the last 100 messages pertaining to any channel, type **display messages channel all 100**.

Note that specifying both the *card* option and the *channel* option displays all of the specified card-related messages. However, of the channels that are specified, only those that reside on the specified cards are displayed. For

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occurrences of that message, **display messages id TWIP004,TWIP009** displays all occurrences of both messages.

source

The *source* option allows you to display messages logged by a particular system process. Table 30 shows some of the standard system processes.

Table 30. Standard System Processes

Process Name	Function	Types of Messages Reported
MTC	System Maintenance Process	Card/Channel status, Diagnostic Results
SPIP	SP Card Interface Process	Speech, TTS, PRI, SR Problems/Status
TSM	Script interpreter/processor	Script Problems
TWIP	T1 Interface Process	T1 Problems/Status
VROP	Speech Database Process	Playback/Coding Database Problems

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pattern

The *pattern* option allows you to specify a regular expression as accepted by *logCat* that may appear in any part of a message. (See logCat on page 514 for additional information.) The *pattern* must enclosed in quotes and surrounded by slashes (/). For example, **display messages pattern '/XYZ/'** provides all messages that use the pattern XYZ anywhere in the message.

Note: The *pattern* option is case-sensitive.

number

The *number* option specifies the number of messages you want to display, or you can use the **all** value to display all messages. The command accepts a 3-digit number so you can display up to 999 messages.

Note: Although the *number* option only allows up to 3 digits, you may have more than 999 messages logged. Therefore, you can only view up to 999 messages in the message log report with the **display messages** command. The **logCat** command with the **-t**

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system message formats along with definitions and examples. Each message displayed conforms to the following format:

```
PR DAY MON DD HH:MM:SS ZZZ YYYY   SOURCE
     TTTTTTTT YY UU NUM TEXT...
     TEXT (continuation if necessary.)
blank line
```

Table 31. System Message Formats

Field	Definition	Examples
PR	Priority	*C (Critical), ** (Major), * (Minor), “”(Event)
DAY	Day	Sun - Sat
MON DD	Date	Jan 1 - Dec 31
HH:MM:SS	Time	00:00:00 - 11:59:59
ZZZ	Time Zone	EST, EDT, CST...

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Table 31. System Message Formats

Field	Definition	Examples
UU	Unit Type	`CA` (Card) or `CH` (Channel) or `--` if N/A
NUM	Unit Number	`000` to `999` or `---` if N/A
TEXT	Message Text	Varies with message (see example); can be more than one line long.

Example

The following example is representative of the output that results from typing **display messages**:

```
                MESSAGE LOG REPORT

Pr  Time          Source
--  ----          ------

** Wed Dec 30 15:55:16 1992TWIP
    TWIP017  T1 CA   0   Facility out of service.
```

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display_permissions

The **display_permissions** command displays the current voice system security permissions for a particular user.

Synopsis

display_permissions *<user login>*

Description

The **display_permissions** command displays the current voice system security permissions for a particular user if any are assigned.

The ***<user login>*** argument represents the user for which permissions are to be displayed.

Example

The following example displays voice system security permissions for a

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display services

The **display services** command lists all valid services or scripts.

Synopsis

display services

disp services

Description

The **display services** command lists all valid services or scripts on a system.

Example

The following example lists all valid services or scripts currently on the system.

disp services

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Synopsis

display_tam

There are no arguments for this command.

Description

The **display_tam** command displays all the values of the sensors monitored by the TAM unit. If necessary, the **display_tam** command sends this output to page.

dspActAlarms

Synopsis

dspActAlarms [**-H**] [**-t** ***cnt***] [**-b** ***cnt***] [**-a** ***startTime***] [**-z** ***endTime***] [**-s** ***/searchPatl***]

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Description

- **-b *lines*** — show beginning "lines" of file.
- **-a *locant*** — specifies the place to start printing.
- **-z *locant*** — specifies the place to stop printing.
- **-s *locant*** — search for specific patterns or times. There may be more than one specification.

See Also

dspRetAlarms

retireAlarms

dspRetAlarms

Synopsis

dspRetAlarms [**-H**] [**-t *cnt***] [**-b *cnt***] [**-a *startTime***] [**-z *endTime***]
[**-s *locantPat***]

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- **-t *lines*** — tail the last "lines" of file.
- **-b *lines*** — show beginning "lines" of file.
- **-a *locant*** — specifies the place to start printing.
- **-z *locant*** — specifies the place to stop printing.
- **-s *locant*** — search for specific patterns or times. There may be more than one specification.

See Also

dspActAlarms

retireAlarms

edExplain

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The **edExplain** command edits the explanation text for one or more message

Description

The **edExplain** command edits the explanation text for one or more message tags.

The following are environment variables for the **edExplain** command:

EDITOR

This is the program used to “edit” the explanation text. The default is vi.

EXPLAINDIR

This is the root directory of the explanation texts. The default is **/gendb/data/explain**

VERBOSITY

If set to anything, **edExplain** will run verbosely.

An explanation file is basically a clear text file. Its contents are displayed “as is” to the user when this explanation is requested. If it is a primary explanation procedure (an explanation that the end user will want to reference by name),

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The **translateLst** file should be updated to include the msgID, msg string, and file name, in which the explain text can be found (usually just the msgID name). When exiting the **translateLst** file, enter **:w!** followed by **q**.

Two exceptions exist to the rule that the file contains clear text that will be displayed to the user:

- Any line beginning with a pound sign (#) character is considered to be an internal comment and is not displayed.
- Lines beginning with ".explain" are special directives to include at this point another explanation text in place of this line.

Example

In the following example, the first line is the SCCS identification line and is not displayed to the end user. The second line identifies the explanation. Then the text describing the problem follows.

```
#   %W% %T% %H%
<< TWIP007 TWIP_BDERR >>
```

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encode

The **encode** command converts ADPCM16 or ADPCM32 files to PCM64 files.

Synopsis

encode [adpcm32/adpcm16]

Description

Encode is a filter that converts PCM64 files to ADPCM16 or ADPCM32 files.

ADPCM16 is easy to code and saves space, but does not provide good quality sound.

Warning

The voice header used by GSE should be stripped (using **stripdhr**) before running encode.

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See Also

addhdr
codetype
decode
striphdr

erase

The **erase** command deletes a phrase from a UNIX talkfile (SSP only).

Synopsis

erase phrase <*phrase number*> from talkfile <*talkfile number*>

Description

The **erase** command deletes the phrases identified by the phrase ID from the UNIX file. The phrase number many be any of the following:

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After you enter the **erase** command, the system displays the following message, asking you to confirm the command before each phrase is erased:

```
Do you want to erase phrase <phrase#>? (y/n)
```

If the “all” option is used for phrases, the system prompts you only *once* to confirm the command:

```
Are you sure you want to erase ALL phrases from
talkfile <talkfile#>? (y/n)
```

If the specified phases does not exist, the system displays:

```
Phrase <phrase#> does not exist in talkfile
<talkfile#>
No action taken.
```

When the system has deleted the phrase or phrases, the system prompt is displayed.

Note: The **erase** command removes a phrase from the SPEECHDIR default directory, which is **/home2/vfs/talkfiles**.

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The following example erases phrases 218 through 222 and phrase 225 from talkfile 26.

erase phrase 218-222, 225 from talkfile 26

The following example erases all phrases from talkfile 29.

erase phrase all from talkfile 29

See Also

add
copy
list

explain

The **explain** command displays on-line error message explanations.

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Description

The {msgID} is one of the two forms of identification that comes with each online error message. The primary form is ***{CLASS}nnn***, where *{CLASS}* is the class of messages, such as CGEN, TSM, and *nnn* is the index of the message within the class of messages. The second form, which is available with most messages, is the mnemonic form (for example, CGEN_NOMSGQ or CGEN_MSGRCV.

If the explanation of the message fits in 24 lines and only a single explanation is requested, it is printed without interruption. If the explanation is longer than 24 lines or more than one explanation is requested, the output is *paged* via the use of a paging program. Use the **-d** option to disable paging. The default paging program is **/bin/pg**.

If the **-l** option is used, **explain** looks up all messages whose *{msgID}* matches the pattern. For example, **explain -l A V** lists the names of explanations available that begin with either “A” or “V,” while **explain -l VROP** lists all explanation names available that begin with **VROP**. In other words, the *{pattern}* is anchored at the beginning of the *{msgID}* and assumes a

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PAGER

The pager program used if the explanation is longer than 24 lines or more than one explanation is requested. The default is **pg**. If you do not want paging even for long explanations, using **-d** or setting **PAGER=cat** will disable paging. A one-line form would be:

PAGER=cat explain {msgID} or **explain -d {msgID}**

EXPLAINDIR

The directory in which the explanation directories are found. The default is **${PRODUCTROOT}/gendb/data/explain**.

PRODUCTROOT

This is the installation directory and defaults to / (root).

VERBOSITY

This is a debugging aid. Setting it to anything causes debugging output to be generated while **explain** performs its job.

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The explanation file itself is almost a clear text file of what you want the user to see when they ask for the explanation. There are two features of the file that are not plain clear text. All lines beginning with the pound sign (#) character are treated as internal comments and are not output. Also lines of the form **explain {msgID}** have special meaning. They cause the inclusion of the explanation text specified by the *{msgID}*. This allows you to have common explanations and reference from more than one explanation.

The recommended format for an explanation procedure is:

```
# Comment and SCCS keywords

<< {msgID} [{msgID}...] >>
{text of message}
...
```

When creating a new explanation procedure, you will be asked to edit the synonyms list and be placed in the appropriate **translateLst** file. There are instructions at the top of the file. Each noncomment line is a list of synonyms, with the right most word on the line being the name of the file in which the text

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second example has a truncated file name, because file names are limited to 14 characters in most UNIX systems and if you want to use source code control, then the file name must not be longer than 12 characters. The recommended way to store an explanation is under a file name related to the mnemonic *{msgID}* rather than the {*CLASS}nnn* name, since the later is meaningless. A file name of the form *{CLASS}nnn* does not provide a sophisticated user with much information about the contents of the file, while the mnemonic form does. If the mnemonic is longer than 12 characters, then you should create a shorter name related to the mnemonic that is unique within 12 characters.

The following environment variables affect the behavior of **edExplain**

EDITOR

This is the name of your preferred text editor. The default is vi.

EXPLAINDIR

This is the directory in which the explanation directories are found. The default is **${PRODUCTROOT}/gendb/data/explain**.

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Files

/gendb/data/explain # directory in which explanation directories are located.

/gendb/data/explain/translateLst # file containing the synonym list of {msgID}s.

See Also

edExplain

findHomes

The **findHomes** command populates your home directory with user files saved as part of an assisted upgrade.

Synopsis

findHomes ***[-?] [-v] [-D <dir>]***

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Description

For each user, the entire directory structure (including all files) preserved from the user home directory on the pre-upgrade machine is moved to the user home directory on the upgraded system. If a saved file has the same name as a file that already exists in a user's home directory on the upgraded system, the saved version is moved to **o.*<filename>*** in that directory.

Files for any users whose login IDs change from the pre-upgrade system to the upgraded system must be manually moved from their saved location to their new home directory. This manual intervention is also required for any user who did not use his login ID as the name of his home directory on the pre-upgrade system.

The **findHomes** command should be run after the assisted software upgrade is complete and logins for all users expected to move from the pre-upgrade system to the upgraded system are administered on the upgraded system.

The ***[?]*** argument displays a help message.

The ***[-v]*** argument causes a list of saved files to be printed as they are moved.

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fails, then the files are restored in a directory with the full path name of the user's home directory on the preupgraded system.

Note: A message is printed indicating any directory for which all the files are not successfully relocated.

Example

The following example causes all files found in **/home/o.*<homedir>*** and **/usr/*<homedir>*** to be moved to the home directory specified for each non-system user specified in the **/etc/passwd** file on the upgraded system:

findHomes -v -D/usr

fixLogFile

The **fixLogFile** command upgrades existing logging files after **IComp** is run so that data continues to be readable by **logCat**.

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Description

When classes of logging messages are expanded, contracted, inserted, or removed, **fixLogFile** can change the index assignments of messages. When this happens, messages whose indexes changed and were logged under the previous environment become unexpandable by **logCat**. The **fixLogFile** command, given information about the previous assignments and the new assignments, upgrades logged data so that it remains expandable by **logCat**.

Each message is examined. If the class of messages appears in the new environment and still covers the index assigned to the message, a new index is assigned based on where it appears in the new environment. If the class of messages is no longer part of the message logging environment or if a class is reduced in size so that it no longer covers the index of a message, then it is necessary to use one of the following three options:

- ***-d*** — Deletes the message entirely from the logging file.
- ***-r*** — Demaps the message. This entails expanding the message in the old environment and then creating a new logging message using the LOG_REMAP_DISCARD format. The data is still readable in the log files

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Normally, **fixLogFile** generates a short message about each file that it converts. The ***-S*** flag suppresses this output.

The **fixLogFile** command requires access to the **old o.systemLog.h** and **o.textLogFmt** files and the new **systemLog.h** file to perform its job. It expects to find these files in **$LOGROOT/formats**. If alternate sources of these files are to be used, the ***-o*** and ***-n*** flags are used. Each of these flags takes a *{spec}* argument, which has the following form:

{dir}[,{systemLog.h}][,{textLogFmt}]]

The default values for these two specifications is:

-o ${LOGROOT}/formats,o.systemLog.h,o.textLogFmt
-n ${LOGROOT}/formats,systemLog.h,textLogFmt

The *{dir}* portion specifies an alternate directory in which the **[o.]systemLog.h** and **[o.]textLogFmt** files are to appear. If the remainder of the *{spec}* is missing, the default file names apply. If specified, the **{systemLog.h}** and **{textLogFmt}** portions specify the names of these two files as they appear in the specified *{dir}*. Any section of the specification that

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${LOGROOT}/data is examined to see if it is a compressed logging file. If it is not, it is ignored. If it is, it is converted.

After the files are converted, the time stamps are reapplied so they have the same date after conversion as they did before the conversion.

Caveats

The **fixLogFile** *command* only takes care of changes in classes of logging messages. For example, if the class PERM was added, removed, or moved, **fixLogFile** could correctly deal with the changes to the logging files. The **fixLogFile** command does not deal with reorganizations or changes of messages within a class. Do *not* change the order of appearance messages or the arguments to a logging message if you expect to be able to expand the data in the future or save the previous **textLogFmt** file for the expansions.

If the conversion takes place while the **logdaemon** process is running, be sure to either stop and restart **logdaemon** or reinitialize it using the **reinitLog** command.

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iCk, iCkAdmin

The **iCk** process is the daemon process that performs various integrity checks on the system based on rules in a script file.

The **iCkAdmin** command is a related administration command.

Synopsis

iCk [-v NNN] [{envName}={value}] [{rule-file}]

iCk -c [-i | -f {file} | cmd...]

iCkCmd [-i | -f {file} | cmd...]

iCkAdmin [-c] [-a {on|off}] [s {entryType [:{ID}]}]
[-e {entryType [:{ID}]}] [iCk.rules-file]

Description

The **iCk** *process* performs various jobs that fall into the category of “integrity”

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As a daemon process, **iCk** accepts one flag, the **-v** flag, which initializes the internal verbosity flags according to the value *NNN* provided. This value can be in decimal, hexidecimal, or octal. None of the symbolic flag names apply in this mode. Table 32 describes the bit meanings.

Table 32. Verbosity Flag Values

Bit	Name	Description
0x0001	V_RESCANBB	Log messages whenever the Bulletin Board is rescanned
0x0002	V_TIMINGMSG	Log messages when timing messages are sent
0x0004	V_HUNGPROCESS	Log messages when hung process checking is performed
0x0008	V_AUTOREBOOT	Log messages when autoreboot processing is performed
0x0010	V_FILEMAX	Log messages when maximum file checks are performed
0x0020	V_FILECHECK	Log messages when file ownership/modes are checked
0x0040	V_PIPECMDS	Log messages when pipe commands are received

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Environment Variables

The **iCk** *command* also accepts environment variables from the command line of the form:

{variable-name}={value}

These can be used to set the following environment variables that also affect the behavior of the **iCk** command:

VERBOSITY

This is an alternative way to set the internal verbosity flags. The meanings of the bits are the same as for the value supplied to the **-v** flag.

SHELL

This specifies the name of the shell to be used when executing commands. The default is **/bin/sh**.

UTMP

This specifies where the “utmp” file associated with the system is located. Currently, this value is not used except for debugging purposes.

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When **iCk** is executed with the *-c* flag or by the alternate name **iCkCmd**, is run as the command interface to the **iCk** daemon process.

-i This option specifies that **iCk** to run in interactive mode. This causes it to generate prompts as it requests information from its standard input.
Without the *-i* flag, **iCk** silently accepts input from its standard input. This might be useful if used in a shell script.

-f {file} This value causes **iCk** to read a series of commands from the specified file or device instead of from its standard input.

{cmd}... This field causes **iCk** to use the remaining arguments on the command line as the commands to be sent to the **iCk** daemon process.

See Commands on page 490 for details about commands to which **iCk** will respond.

Administers Rules The **iCkAdmin** command administers the **iCk** rules file. It has no direct

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- **a {on|off}**

  This option causes the rules file to be read, the **autoReboot** entry set the specified state, and written back out again.

- **-s {entryType[:{ID}]}**

  This option causes the rules for the specified entries to be shown.

- **-e {entryType[:{ID}]}**

  This option allows interactive editing of the specified entries. *This feature is not yet complete*.

For both the *-s* and *-e* options, the **entryType** is the name of a type of entry minus the dollar sign ($) character, that is, **rescanBB**, **timingMsg**, etc. The optional **{ID}** field means the name of the process for **timingMsg** and **hungProcess** entries and the name of the file for **fileMax** and **fileCheck** entries.

Rules File

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- *{runlevels}* — This is specification of the run levels at which to perform the activity. The syntax is the same as used by *init*, that is, 4 = run level 4, 234 = run levels 2, 3, or 4.
- *{checkPeriod/Time}* — This indicates the activities performed repetitively will have a specification of either how often to perform the activity or at what times of the day or week to perform the activity. One of three forms is used:

  ~ -

  Perform the activity once when the rules are first read and then do not perform it again.

  ~ checkPeriod

  A period of time is specified as the sum of a number of different time elements: [NNd] [NNh] [NNm] [NNs]. For example, 5m means “every 5 minutes,” and 5h 30m means “every five and a half hours.” Each element is a number followed by the type of specifier, d, days, h, hours, m, minutes, s, seconds. The order is irrelevant, 5h 30m is the same as

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All five elements are required for the specification to be accepted. Each element can be:

- *

  All items in class (days of the month, hours in the day, and so on.).

- N

  The specific item

- N-M

  The items between N and M inclusive

- N,M

  The individual items N and M in the class

The items within each class are:

- *{monthday}* — 1-31
- *{weekday}* — ASCII day of the week (sun, mon, ...)

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For example: "* * * **0 0**" means perform each hour on the hour. "**13 fri 12 0 0**" means perform the activity at noon on any Friday the 13th.

- *{cmd}* — This specific command is executed if the activity so dictates. Within the command itself, there are four meta-words that can be used to generate flexible commands. Not all four meta-words have meaning in all cases.

  ~ *%f*

  The full file name

  ~ *%d*

  The directory portion of the file name

  ~ *%b*

  The base name of the file name

  ~ *%p*

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Activities

- **$timingMsg *{process} {runlevels} {checkPeriod/Time}***

  This activity causes a timing message to be sent to a specified process at regular intervals whenever the system is at one of a specified run levels. Currently, the TSM and the VROP processes expect to receive timing messages once every 2 seconds.

- **$hungProcess *{process} {runlevels} {checkdPeriod/Time} {timeout{fill|report|exec cmd}}***

  This activity causes a specific process, whose name appears in the Bulletin Board, to be evaluated to see if it is hung in regard to reading its messages. Processing only takes place when the system is at one of the specified run levels. *{timeout}* is the length of time the process can stay in the “working” state before being declared hung. Once a process is determined to be hung, one of three responses are possible:

  ~ kill

  The process is killed by sending it first a **SIGUSR1** signal, followed by a **SIGKILL** signal if it does not voluntarily exit.

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- **$autoReboot** ***{off/on} {u-reboots} {ubPeriod} {runlevels} {setPeriod}***

  This activity controls the feature that automatically sets the UNIX kernel autoreboot flag. If the entry is marked “off,” then the autoreboot flag is not automatically turned on. It can still be manually set with an **iCk** command. If the entry is marked “on,” then the automatic setting is enabled. The remaining parameters control when the flag is set. The algorithm that controls the setting of the flag is as follows:

  ~ The number of unanticipated reboots of the kernel is determined by examining the **/etc/wtmp** file (the history file of **init** actions) for “change of run level” entries and “boot time” entries. Any entry falling within the {*ubPeriod}* of time prior to the most recent system boot time are considered. If a “boot time” entry is preceded by a “change of run level” to levels 0, 5, or 6, the boot is considered anticipated, since someone deliberately entered the command to reboot the system. If a “boot time” entry is not preceded by such a “change of run level” entry, then the reboot is considered unanticipated. This includes power failures, reset button pushes, and panics of the UNIX kernel.

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For example, typing **$autoReboot on 5 60m 4 5m**, which is the standard default setting, specifies that if fewer than five unanticipated reboots occurred in the past 60 minutes, the autoreboot flag is set in the UNIX kernel 5 minutes after reaching run level 4. If five or more unanticipated reboots occurred in the past 60 minutes, then the autoreboot flag is not set until 60 minutes after reaching run level 4.

- **$fileMax {file} {maxSize} {checkPeriod/Time} reduce {minSize}**
  $fileMax {file} {maxSize} {checkPeriod/Time} remove
  $fileMax {file} {maxSize} {checkPeriod/Time} exec {cmd}

  This activity checks one or more files to ensure that they have not grown too large. *{file}* is the name of a file or a pattern specifying a set of files. *{maxSize}* is the maximum size in bytes to which a file must grow to before it triggers a response from **iCk**. A check on the size of the file or files is made as specified by *{checkPeriod/Time}*. One of three responses to a file becoming too large can occur:

  ~ reduce

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The command specified is executed. In this case the meta-words **%f**, **%d**, and **%b** are defined as the various parts of the file name and can be used in the command.

- **$fileCheck *{file} {runlevels} {checkPeriod/Time} {type} {owner} {groups {modemask} {modes} [cmd]***

  This activity can be used to ensure that a specific file or files exist and have the proper ownership and modes. *{file}* specifies the file or a pattern that selects a set of patterns. *{runlevels}* specify at which run levels the checks are made. *{checkPeriod/Time}* specifies the frequency of checks. *{type}* specifies the type of file. It can take one of seven values:

  ~ - The type does not matter.
  ~ *f* The file is a “regular” file.
  ~ *d* The file is a directory.
  ~ *p* The file is a named pipe.
  ~ *c* The file is a character special device.
  ~ *b* The file is a block special device.

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and *{modes}* were 0444, then the check would be to ensure that the file is readable by anyone, but whether it is writable or executable is not of interest. If on the other hand *{modeMask}* was 0777, while *{modes}* was 0444, then the check would be to ensure that the file is only readable and must not be writable or executable by anyone. If a file fails to pass a $fileCheck test, it is always reported. If the optional *[cmd]* is specified, then this command is executed. The meta-words %f, %d, and %b are set to the various parts of the file name for use in the command.

- **$EOF**

  This special mark indicates the end of the rules. Anything beyond this mark in the rules file is ignored.

Examples of Rules

$fileMax /etc/wtmp 360000 ~* * * 0 0~ reduce 36000

If the file **/etc/wtmp** exceeds 360,000 bytes, reduce it to 36,000 bytes. Check the size of the file on the hour. (The structures in this file are 36 bytes in length and it must be an integral number of structures.

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$fileCheck /etc/shadow - - f root - 0777 0400
Check only once. The **/etc/shadow** file should be owned by *root* and be read-only to *root*.

$fileMax /tmp/*.lst 10000 - remove
Remove all the files in **/tmp** ending with an extension of *.lst* if they are bigger than 10,000 bytes. Do this only once.

$fileMax /tmp/*.hist 0 - exex ~/bin/mv %f %d/o.%b~
For any nonzero-length files in **/tmp** with an extension of *.hist*, save them as **/tmp/o.*.hist**

Commands

In command mode, **iCk** responds to the following commands. Each command sends a message to the **iCk** daemon process except for the first command. All commands can be abbreviated to the shortest unique string. Hence **au** is sufficient to identify the *autoReboot* function and **ac** the **activate** function. For most commands one letter is sufficient.

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then the window period of time for the **$autoReboot** rule is used. This command generates three numbers: the total number of reboots in the specified period of time *prior to* and including the current boot of the system, the number that were anticipated (or deliberate), and the number of unanticipated reboots. This request does not communicate with the **iCk** daemon process.

- **autoReboot {set|clear}**

  This command forces the kernel autoreboot flag into the specified state.

- **readRules [rule-file]**

  This command rereads the rules file. If a new file name is provided, then it is read instead of the previous file. Before using this command, the new rules should be checked with the **iCkAdmin** command to insure syntactic correctness.

- **wakeup**

  This command makes the **iCk** daemon wake up immediately and check

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- **quit**

  This command causes the **iCk** daemon to exit gracefully. (Since **iCk** is normally run from the **/etc/inittab** file, **init** immediately respawns the daemon.) In interactive mode, the command requires confirmation.

- **verbosity *{value}***

  This command sets the **iCk** daemon's verbosity flags to the specified values. In this case, the symbolic names are accepted as well as octal, decimal, or hexidecimal values. Combined values can be produced by separating values with the pipe (|) character.

- **activate *{spec}***

  This object, in conjunction with the V_TRACE flag, causes the activities specified by *{spec}* to be logged whenever they execute.

- **inhibit *{spec}***

  This object, in conjunction with the V_TRACE flag, causes the activities specified by *{spec}* not to be logged whenever they execute.

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there is the *a_clockID*, which is nonzero if an alarm is running for the current activity and the **a_nextAlarm**, which indicates at what time the next alarm is set to expire. At the end of the entry is the **a_flags**, 0, meaning no flags are set, AF_SUPPRESS_TIMING, meaning that timing is deliberately suppressed for the time being, AF_CHECK_NEW_RUNLEVEL, meaning that when the run levels change, this activity is checked to see if it should reactivate, and AF_DEBUG_OFF, which is set for any activity that has been inhibited by the **inhibit** command. There is also the **a_state**, which indicates the current state of the activity. Its values are:

- AS_INACTIVE — This value is currently not being processed.
- AS_TIMER_RUNNING — There is currently an alarm outstanding for this activity.
- AS_SERVICE_QUEUED — An alarm has expired for this activity, but has not yet been processed.
- AS_IN_PROGRESS — An activity is currently being processed.

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The above-mentioned commands, **activate**, **inhibit**, and **print**, require an

- **timingMsg**

  This object is all the **$timingMsg** activities.
- **hungProcess**

  This object is all the **$hungProcess** activities.
- **autoReboot**

  This object is the **$autoReboot** activity.
- **fileMax**

  This object is all the **$fileMax** activities.
- **fileCheck**

  This object is all the **$fileCheck** activities.
- **miscellaneous**

  This object applies to the **print** command only. It causes a report of whether the autoreboot flag was automatically set or not, the state of the UNIX kernel autoreboot flag, the current run level, the number of rules read, and the number activities currently in force to be logged.

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All remaining information is activity specific. By activity the information logged is:

- **$timingMsg**

  The name of the process, the Bulletin Board slot, and instance.

- **$hungProcess**

  The name of the process, the PID, the Bulletin Board state, work count, time, flag, slot, and instance. The flag can have values of HP_STUCK, meaning that it does not seem to be reading its message queue, HP_SIGUSR1, meaning it has been sent a SIGUSR1 signal to request it to die, and HP_SIGKILL, meaning that it has been killed with the uncatchable SIGKILL signal.

- **$autoReboot**

  The computed unanticipated reboot count at the time the system was last rebooted plus the length of the period over which the computation is made.

- **$fileMax**

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- **core**

  This command is available for debugging purposes. It causes **iCk** to produce a core file in **/tmp/iCk.core** via a core dump operation is a spawned child process. In other words, **iCk** itself does not stop, but you do get a reliable core of **iCk** for debugging evaluation.

Default File

The **iCk** process responds to default parameters placed in **/vs/etc/default/iCk**. Initially there are two values. These values set specific internal parameters:

- RUNLEVELTIMEOUT

  This parameter specifies how long to wait after changing run levels before accepting the value from **/etc/utmp** without confirmation from **iCkCmd**. The default is 3 minutes.

- RECHECKTIMEOUT

  This parameter specifies how long to wait after changing run levels before

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Files

/vs/etc/iCk.rules # the default rules file
/tmp/iCkPipe # the named pipe used to speak to iCk
/vs/etc/default/iCk # default parameters

Caveats

The **iCk** process is a daemon process running as “root.” Since the rules support the concept of executing an arbitrary command, the **/vs** and the **/vs/etc** directories need to be protected against tampering and the **iCk.rules** file should only be writable by authorized users.

See Also

logCat

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logCat

Syntax

[-{t|b} lines] [-c] [-m] **# Simple behaviors**
[-a locant] [-z locant] **# Beginning and endings**
[-s locant] [-q locant] [-R] **# Selection of messages**
[-P priority]
[-d data -l log-prefix | **# Source of data**
-L {cmpMsg} | file] [-r root]
[-f format] [-V] **# Display options**
[-w width] [-p continuation-prefix]
[-T textLogFmt] [-A {s|c}:abbreviations]
[-B breakChrs] [-[U|H]]
[-v] [-D] **# Misc/debug options**

Default behavior with no arguments is to display all the files of the 'L' type specified first in the Config file, that is:

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- **-c** — Continuously display last lines of file
- **-m** — Meticulous time check. Normally the log file name and the creation date are used to determine the date of the file. To be sure that the creation dates are accurate, use the ***-m*** flag. This causes the time stamp of the first message in each log file to be used instead of the name and modification date. This is slower, but more reliable.
- **-r *root*** — Specify alternate "root" directory for **textLogFmt** file. The default is **\usr\spool\log**.
- **-a *locant*** — Specifies the place to start printing.
- **-z *locant*** — Specifies the place to stop printing.
- **-s *locant*** — Search for specific patterns or times. There may be more than one -s specification.
- **-q *locant*** — Search for specific pattern in raw unexpanded log data. This is much faster than ***-s*** for pattern searches, but only the variable portion of the log messages can be included in the search pattern. There

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- **-p *continuation-prefix*** — The string to be appended to each continuation line. The default is no continuation prefix. The continuation prefix can also be provided via the environment variable LOGCONTPREFIX.
- **-d *data*** — Name of the directory to find the log files in. The data directory can be provided in the environment variable LOGDATA. The default is ${LOGROOT}/data.
- **-l *log-prefix*** — Prefix of the log files to examine. The default is the first log file in the Config file. The log-prefix can also be provided by the environment variable LOGFILEPREFIX.
- **-L *cmpmsg*** — If just one compressed message needs to be interpreted, the *-L* option can be used to pass a single compressed message to "logCat" as an argument for interpretation.
- ***file*** — explicit file to be displayed. If "-", use standard input.
- **-f *format*** — Format specification for printing messages. See Format on page 506 for details.

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- **-P** — Selects messages by their priority. Priorities can be specified as a number or as the symbolic representations - for E_NONE, M for E_MANUAL, * for E_MINOR, ** for E_MAJOR, and *C for E_CRITICAL. More than one -P can be specified if more than one priority is of interest. For example:

  -P 3 -P 4 # All E_MAJOR and E_CRITICAL msgs.

  -P * -P *C # All E_MINOR and E_CRITICAL msgs.

- **-T textLogFmt** — Specifies an alternate "textLogFmt" file to be used when expanding logging messages. This feature must be used carefully. The alternate "textLogFmt" file must be compatible with the "cmpLogFmt" used to log the messages in terms of the number and order of fields for each message.

- **-A {s|c}:abbreviations** — Enable abbreviation translations using a script found in the file abbreviations.

- **-A o** — Disable abbreviation translations. See the description of abbreviations below under ABBREVIATIONS.

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- **-U** — Unhide "hidden" messages. This option causes all messages, including those being hidden by the "hideMsg" command to be displayed.
- **-H** — Enable the "hide" message feature. This option is used to toggle off the **-U** switch when it appears earlier on the command line or in the **$HOME/.logCatRC** file.
- **-D** — Set a debug flag, which causes locants to be printed at the beginning and some statistics to be listed at the end of the run.

logCat can take its options from **$HOME/.logCatRC**. This allows the user to tailor his or her "logCat" behavior without having to enter it on the command line each time "logCat" is used. Options in the .logCatRC file should be the same as they appear on the command line. The options that make most sense to put in the *.logCatRC* file are **-m**, **-r**, **-p**, **-f**, **-V**, **-R**, **-T**, **-A**, **-B**, **-U**, and **-D**.

Locants

Locants can be either date/time specifications or search patterns.

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specified date, in other words, "Oct. 11, 97" and "10/11/97" are assumed to be "10/11/97 00:00:00". A month and a day without a year are assumed to be in the current year unless this would put it more than 1 month in the future, when it is assumed to be the previous year. For example, assuming that it is currently "Mar. 3, 98", if the user specifies "02/15", it is assumed to be "02/15/98". If the user specifies "11/3", it is assumed to be "11/03/97", since "11/03/98" would put it more than 1 month in the future, which is unlikely to be what the user had intended. You can force the proper interpretation of any date by fully specifying it; that is, adding the day of the month and the year.

If the form "item=xxx" form is used, all elements not specified default to '*', hence "wday=Sun" means all messages on any Sunday. *Do NOT* mix standard format with the "item=xxx" format. The results are unpredictable.

Spaces should be enclosed in quotes, for example, -a"7/14/87 05:08:30". Search patterns are enclosed in forward slash (/) characters, with an optional repetition count following, for example, -z/GEN006/2 means the second message containing "GEN006".

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The repetition count has no meaning with the "-s" or "-g" locant, but does for

sigh (+) sign immediately following the s or q for the second and subsequent locant that is to be OR'ed together. For example:

"-s/GEN006/" "-s+!/New York/"

means on messages containing "GEN006", but not containing "New York".

It is also possible to apply search locants to specific fields of a message by specifying a "synthetic field" and an equal sign prior to the search pattern. For example, "-s@sym@=!/LG_BADARGS/" means all messages that are not of type "LG_BADARGS."

The search capability supports two different languages. The default language is compatible with the standard "sh" syntax and supports the following meta-search constructs:

- **^** — Beginning of message
- **$** — End of message
- ***** — Any number of unspecified characters

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The second search language uses the standard "regular" expression syntax. It is in effect when the -R flag is specified. It supports:

- **^** — Beginning of message
- **$** — End of message
- **.** — A single unspecified character
- **[xxx]** — Any character is the list "xxx". "xxx" may include ranges of characters: A-Z, etc.
- **[^xxx]** — Any character not in the list "xxx"
- **<chr>*** — Any number of occurrences of <chr> including 0
- **<chr>+** — Any number of occurrences of <chr> with a minimum of 1
- **<chr>{m,n}** — From 'm' to 'n' occurrences of <chr>
- **\<chr>** — Normal C backslash conventions, \n \t \b \f \r \NNN \\ \[
- **(*pat*)** — Parentheses serve to group portions of a pattern. {pat} can be

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Format

The basic format of the message can be controlled in a number of ways. The "-f" option or the LOGFORMAT environment variable specify the format using the following special sequences to specify the various parts of a message. The default format is: "%P %T %N %S:%L\n%M"

- **%P(...)** — Priority level format: %d or %s
- **%T(...)** — Time level format: all options supported by "date" cmd. There is also an additional format, "%u", which is the Unix time printed as an 8-digit hexidecimal number.
- **%N** — Name of process.
- **%S** — Sourcefile name.
- **%L** — Line number.

Message text

If (%r) is specified, the fields of the message are not expanded, but just

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- **\{chr}** — Standard C backslash conventions
- **...** — All other characters are printed as is.
- Synthetic Fields — Synthetic fields are alternate names for **%P**, **%T**, **%N**, **%S**, **%L**, and **%M** fields, but they also give access to specific fields within the %M field by name or index. The legal synthetic fields are:
  - `@index@` OR `@id@` OR `@i@` — The absolute index of the message.
  - `@symbol@` OR `@sym@` OR `@s@` — The symbolic name of the message.
  - `@class@` OR `@c@` — The class of the message.
  - `@classIndex@` OR `@ci@` — The index of the message within its class.
  - `@priority@` OR `@pri@` OR `@p@` — The priority of the message in %s format.
  - `@time@` OR `@t@` — Equivalent to %T. These may be followed by specifiers like ".sec", ".hour", ".mon", and so on, to get a specific part of the time.
  - `@program@` OR `@prog@` — Equivalent to %N.

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Abbreviations

It is possible to translate common abbreviations. The **-A** option controls this behavior. Abbreviations and acronyms can be translated using a translation script. The feature is turned on with the **-A *c|s abbreviations*** option. It can be forced off, if enabled via the environment variable, via the **-A a** option.

The file **abbreviations** is the source of the translations. Translations is done in one of two forms, "simple", denoted by s, or "complex", denoted by c. In simple translation mode, each abbreviation found in a message is translated directly to the specified alternate form in the *abbreviations* file. In complex mode, each abbreviation found is translated into "translation (abbreviation)". For example, if the translation was:

```
btw = "by the way"
```

and the message was:

```
btw, an error occurred
```

in "simple" translation mode, the message would be printed as:

```
by the way, an error occurred
```

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ignored. If either the abbreviation or the translation includes white spaces, it must be enclosed in quote characters as was shown in the example above.

The abbreviations feature can also be enabled by setting the environment variable LOGABBREVIATIONS=*M*:*file*, where *M* is either s or c, and *file* is the name of the file.

IComp

The **IComp** command combines a series of message files and produces a file of compressed format files and an expansion format file.

Synopsis

IComp ***[-s name] [-c name] [-t name] [-d name] [-m name] <file1> [file2...]***

Description

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backslash and newline characters, by **IComp** and treated as one long line during compilation.

IComp produces five files: a header file, a compressed format file, an expansion format file, a data dictionary file, and a data dictionary mapping file. The default names are **systemLog.h**, **cmpLogFmt**, **textLogFmt**, **dataDictLog**, and **ddMapLog,** respectively.

-s name	Changes the **systemLog.h** file to ***name***
-c name	Changes the **cmpLogFmt** file to ***name***
-t name	Changes the **textLogFmt** file to ***name***
-d name	Changes the **dataDictLog** file to ***name***
-m name	Changes the **ddMapLog** file to ***name***

The **systemLog.h** file contains a series of defines of the form:

#define _{FILE}_START NN

where *{FILE}* is the all-uppercase form of the input file name. This header file allows applications to refer to errors of a specific class relative to the beginning of the class of errors and so avoid having to edit code as the

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the expansion formats, which **expandLog** uses to convert a compressed logging file into a human-readable statement.

The **dataDictLog** file contains SQL names for the variable fields in each message. They are of the form:

abs_index <FS>fld-name,type[,length[,precision]]<FS>...<GS>

The *abs_index* is the index number of the message within the universe of all messages compiled by **IComp**. If the optional SQL specification does not appear after the format, **IComp** generates one of the form:

CLASSNNN_M,type[,len[,precision]]

based on the format. CLASS is the all-uppercase name of the file the message came from, NNN is the index of the message within the file, and M is the field within the message, starting at 1.

The **ddMapLog** file contains structures describing where to find each data dictionary entry for each message. It also contains an array with the class names.

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list

The **list** command lists the directory entries for specific phrases in the UNIX file (SSP only).

Synopsis

list -l *[phrase <phrase list>]* [in] [talkfile *<talkfile list>]*

Description

The **list** command displays the phrases stored in the specified talkfile. The valid arguments for the **list** command are:

- ***<phrase list>*** — Specifies the number (or range) of the phrase or phrases to be listed. To list all phrases in a particular talkfile, enter **all** for *<phrase number>*.

  The following example displays all phrases in talkfile 104:

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list phrase all in talkfile 104

The listed entries are sorted by talkfile number and phrase. The information printed for each phrase consists of talkfile number, phrase number, phrase size in bytes, phrase size in blocks, the phrase length in seconds, and the speech coding type.

Note: The **list** command lists the directory entries for specific phrases in the SPEECHDIR default directory, which is **/home2/vfs/talkfiles**.

Examples

The following example displays phrase 174 as stored in talkfile 25.

list phrase 174 in talkfile 25

The following example displays phrase 12 as stored in talkfile 1.

list phrase 12 in talkfile 1

The following example displays all phrases stored in all talkfiles:

list phrase all in talkfile all

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logCat

The **logCat** command reads the compressed logging files and outputs human readable messages.

Synopsis

logCat ***[-{t|b} lines] [-a locant] [-z locant] [-v] [-c] [-m] [-r root] [-s locant] [-q locant] [-w width] [-p continuation-prefix] [-d data -l log-prefix | file] [-f format] [-V]***

Description

The **logCat** command reads in a file of compressed logging messages generated by **log** and expands them to a readable format.

The default action, with no arguments, is to list all log files of the type specified first in the Config file. For example, **logCat -d${LOGROOT}/data -l{primary-log-prefix}**. The options are as follows:

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- ***-m*** — This option is the meticulous time check. Normally, the log file name and the creation date are used to determine the date of the file. If the creation dates have been messed up, the *-m* flag causes the time stamp of the first message in each log file to be used instead of the name and modification date. This is slower but more reliable.
- ***-r root*** — Specifies an alternate root directory for **textLogFmt** file. The default is **/usr/spool/log**. Also, the **data** directory containing the compressed logging data files is expected to be in the root directory if not overridden by the *-d* flag or the LOGDATA environment variable.
- ***-a locant*** — Specifies the place to start printing.
- ***-z locant*** — Specifies the place to stop printing.
- ***-s locant*** — Searches for specific patterns or times.
- ***-q locant*** — Searches for specific patterns or times. This is the same as *-s* if the locant is a time locant. If the locant is a search pattern, the search is applied to the raw compressed log data instead of the expanded log data. This means that the pattern can only include variable portions of the

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mday=mm mon=nn or mon=mmm year=nn[nn] wday=n or wday=ddd yday=nnn. Portions left out default to this date, 0 hours, 0 minutes, and 0 seconds; that is, giving only the time of day indicates today's date. If the form "item=xxx" is used, all elements not specified default to '*'; hence "wday=Sun" means all messages on any Sunday. Do not mix standard format with the "item=xxx" format. The results are not predictable.

Spaces should be enclosed in quotes, for example, **-a"7/14/87 05:08:30"**. Search patterns are enclosed in forward slash (/) characters, with an optional repetition count following, for example, -z/GEN006/2 means the second message containing GEN006. The repetition count has no meaning with the *-s* or *-q* locants, but does for the *-a* and *-z* locants.

The search capability supports the following meta-search constructs:

^	Beginning of message
$	End of message
*	Any number of unspecified characters

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- ***-w width*** — If lines are to be wrapped, this is the width at which the wrapping should take place. 0 means no wrapping and is the default. The width can also be supplied via the environment variable LOGCOLUMN.
- ***-p continuation-prefix*** — This is the string to be appended to each continuation line. The default is no continuation prefix. The continuation prefix can also be provided via the environment variable LOGCONTPREFIX data.
- ***-d data*** — This option is the name of the directory to find the log files in. The data directory can be provided in the environment variable: LOGDATA. The default is **${LOGROOT}/data**. The *-d* argument takes precedence over the environment variable.
- ***-l log-prefix*** — Prefix of the log files to examine. The default is the first log file in the **Config** file. The log-prefix can also be provided via the environment variable LOGFILEPREFIX file.
- ***file*** — Explicit file to be displayed. If "-", use standard input. The use of a file name overrides the *-d* and *-l* options.

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%N	Name of process specified by the **loginit** call of the process
%S	Source file name
%L	Line number
%M	Message text
%%	The % character
\{chr}	Standard C backslash conventions
...	All other characters are printed as is. The format can be provided via the environment variable LOGFORMAT.

- ***-V*** — This option makes the control characters visible. They are printed as \X if they have a special C notation. Otherwise, they are printed as <*NNN*>, where *NNN* is the octal value.

Environment Variables

Environment variables are checked whenever the related command

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LOGDATA

This variable is the directory in which the log data files are found. The default is **${LOGROOT} /data**.

LOGFORMAT

This variable is the format in which to print the log messages. The default is **%P %T %N %S:%L n%M**.

LOGCOLUMN

This variable is the column at which to wrap long expansions. The default is0, meaning do not wrap long messages.

LOGCONTPREFIX

This variable is the string to be prepended to continuation lines when long lines are being wrapped. The default is no prefix.

LOGFILEPREFIX

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This variable is the logfile prefix to be examined if no -/ argument is

logDstPri

The **logDstPri** command creates the shared memory containing the dynamic destinations and priorities of logging messages using the **logMsg()** interface.

Synopsis

logDstPri ***[-H {dir}] [-c] [-v] [-d] [-x {cnt}] [rules]***

Description

The **logDstPri** *command* reads an ASCII rules file, described in **msgDst**, and then sets up a shared memory segment using the information in the rules file In this way, any process in the system using the **logMsg ()**, **vlogMsg ()**, or **logSysError ()** library calls can determine the appropriate priority and logging destinations for each message they send.

By default, the rules files are expected to appear in **${LOGROOT}/msgDst.rules**, where *${LOGROOT}* is **/usr/spool/log**. By

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After changing the rules file, it is recommended that the rules be checked before they are put into service. The *-c* flag causes **logDstPri** to read the rules file and report any rules that are misformatted or not understood. The return value from **logDstPri** is the number of errors detected.

To see the error complaints and install the rules all at once, specify the *-v* flag. This causes the verbose complaints to be generated. The *-c* flag implies the *-v* flag.

When **logDstPri** is resetting the values in shared memory, as opposed to creating the shared memory for the first time, it can be requested to delete the old shared memory and create a new segment by specifying the *-d* flag. Do not use the *-d* flag on a running system because any process that is already using the old shared memory continues to use it even after it is “deleted.” This means that two different rules files might be in force at the same time. It may be necessary to specify the *-d* flag if a large number of new messages have been added to the rules file. Currently, **logDstPri** creates the shared memory 200 entries larger than the highest logging message index found in its rule file. This means that as long and the new rules file does not

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Shared Memory Segment

The shared memory segment is keyed off the inode of the rules file and the define symbol *LDP_KEY*, defined in **log/head/logDstPri.h**. The library routine **ftok({file},LDP_KEY)** is used to generate the shared memory key.

See Also

logCat
logMsg
logDstPri
msgDst

logEvent/logMsg

The **logEvent/logMsg** command allows shell scripts to log a specific message.

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generates messages within the logging system, but which always uses SYSMSG as the message format for the messages it generates. The **logEvent** command emulates the logEvent( ) library routine, while the **logMsg** command emulates the logMsg( ) library routine.

The **logEvent** command requires a destination and a priority when it is called. Messages logged via this interface are explicitly logged to the specified destinations and at the specific priority.

The logMsg command does not take a destination mask or a priority. It gets these pieces of information from the logging destination and a priority shared memory maintained by the **logDstPri** command via the **/usr/spool/log/msgDst.rules** file.

Both **logEvent** and **logMsg** require that the proper number of arguments be supplied for the specified message and that numeric arguments in the message format match pure numbers from the argument list. For example:

GEN012 OUT_OF_RANGE %D<<value,D>> is out of range \ for %s<<arg,S>> in %s<<routine,S>>.

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Table 33 defines the command line arguments.

Table 33. Argument Descriptions for logEvent/logMsg

script	Name of the shell script for which the message is being logged. Normally, this is either **basename$0** or in ksh **${##*/}**
msg	The symbolic name of the message, for example, **LG_OUT_OF_RANGE**
dst	This is only used with the **logEvent** command. It is the bit mask specification of where the message will be sent. It can be a number or symbolic destinations, as specified in *msgDst.rules*. If more than one symbolic destination is specified, they should be concatenated with a plus sign (**+)**, for example, **stderr+log**
pri	The priority of the message. This is only used with the **logEvent** command. It may be any of the following: **0**, **-** or **NONE**, **1**, **M** or **MANUAL, 2, *** or **MINOR, 3, **** or **MAJOR, 4, *C** or **CRITICAL**
srcFile	The name of the file from which the **logEvent** or **logMsg** command is being

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Table 33. Argument Descriptions for logEvent/logMsg

srcLine	The line within the file from which the **logEvent** or **logMsg** command is being issued. If you do not care, you can use "**-**." You might use **$LINENO** from the ksh environment, which is the line with the script or within a function.
arg1	For each argument required by a specific message format, one and only one argument is required. Neither too many or not enough is acceptable. Also, the size and type of the argument must be appropriate: **%s** (takes any kind of argument) **%d %u %o %x %X** (argument must be a pure integer type number, for example, **-10**, **5**, **0177**, **0x8e**) **%f %e %g %E %G** (argument will be interpreted as a pure floating point number, for example, **15**, **15.3**, **1.56E3**) **%c** (argument must be a single character, for example, **x**, **5**, **%**)

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logFmt

The **logFmt** command displays and changes the parameters used to display messages and explanation texts, specifically the messages mnemonics and screen width.

Synopsis

logFmt ***[global] {display|interactive|{opt}={value}}***

Description

Each logging message has a class name and a mnemonic name associated with it. A class name, for example ICK001, is the combination of the name of the class, for example, ICK, and the index of the message within the class, for example, 001. The mnemonic name is a short composite string of characters that identifies the type of logging message. The mnemonic name for ICK001 is ICK_BAD_CMD. By default, the mnemonic names of messages are not displayed when **display messages** is used to examine the logging files. If

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Table 34 defines the **logFmt** command line arguments.

Table 34. Argument Descriptions for logFmt

Argument	Description
global	This modifier causes the action specified to operate on the “global” (system-wide) parameters that control the behavior of **display message**. You must be **root** if you want to change the global parameters. You can examine the global parameters without being **root**.
display	This verb causes **logFmt** to display the current parameters. If *global* is specified, then the system-wide parameters are displayed. Otherwise, your personal parameters are displayed.
defaults	Specifying *defaults* without the *global* option causes your personal preferences about mnemonics and screen width to be removed. You then get the system-wide settings. Specifying *defaults* with the *global* option causes the system-wide settings to be reset so that

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Table 34. Argument Descriptions for logFmt

mnenonics=enable	This option causes mnemonics to be displayed when logging messages are examined with **display messages**.
mnemonics=disable	This option causes mnemonics not to be displayed when logging messages are examined with **display messages**.
width=NN	This option causes the screen width to be set to *NN*, where *NN* is between 40 and 199 columns. The default setting is 75. Do not attempt to set the screen width to a value wider than your screen can actually handle or the display will be unpleasant when using **display messages**.

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When mnemonics are enabled, they also show up when **explain** is used to examine the description of a message. Whether mnemonics are enabled or not, the mnemonic name can always be used to select an explanation using **explain**.

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Examples

The following example enables the mnemonics. This affects only you and overrides the system-wide setting.

logFmt mnemonics=enable

The following example sets the system-wide default so that mnemonics are not displayed. Any user who wants to see mnemonics has to personally enable them. You need to be *root* to execute this command.

logFmt global mnemonics=disable

The following example displays the system-wide settings for mnemonics and screen width.

logFmt global display

The following example sets your personal screen width to 130 characters when displaying messages using **display messages.**

logFmt width=130

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mkAlerter

The **mkAlerter** command reads an alerter description and generates C or C++ code that implements the description.

Synopsis

mkAlerter ***[-M] [-o {executable}] [-p {templ-path}] [-t [-f]] [-q] [-v] [-l] [X=Y...] [{alerterfile}.A...]***

Description

The **mkAlerter** command is a program that reads an alerter description and translates it, with the help of code template files, into compilable C or C++ code. It also produces a make file for compiling the code. Alerter description files always have a ".A" extension. By default, **mkAlerter** produces a single source file, with an extension of ".c". It also produces a header file (extension ".h") and a make file (extension ".mk"). If the make file already exists, **mkAlerter** does not overwrite the existing file. This allows you to modify the

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pieces, one containing *main ()* and the other containing everything else. The source file containing *main ()* ends in "*Main.c*" with truncation as necessary. Once produced, this file, like the make file, is be overwritten. If you want to produce your own initialization, you can use the *-M* option and then make your changes to the "**Main.c*" file.

Normally, the make file specifies that the executable to be produced by this alerter description is the same as the name of the alerter description minus the "*.A"* extension. The *-o* option allows you to specify an alternate executable name. This is used when the make file is generated.

The code template files are normally expected to exist either in the current directory or in **/usr/lib/alerter**. If the templates are not found in either of these places, **mkAlerter** uses its own internal copies, but also reports the fact. If the templates exist elsewhere, an alternate path can be specified with the *-p* option. Each directory that should be searched is separated by a colon (:), the same as a normal UNIX description.

To get the initial template files, the user can specify the *-t* option. This causes **mkAlerter** to create each of the required template files using its internal

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The following is a current list of template files and their contents:

AlertInc.t	Description of include files.
AlertCopyR.t	Copyright notice.
AlertHead.t	Template of the header file.
AlertMain.t	Description of main () function.
Alerter.t	Primary template describing the alerter program.
AlertTest.t	Description of the code to respond to timeouts for alerting.
AlertMsg.t	Template describing a subroutine to process messages for a particular logging destination.
AlertDir.t	Template describing the subroutine to handle logging messages sent directly to the alerter process.
AlertMk.t	Template for the makefile.

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Normally **mkAlerter** produces *#line* directives, which are used by the C compiler to report where errors are detected during compilation. While these are good during the compiling phase, they mislead most debuggers and make debugging difficult. The *-l* option suppresses the *#line* directives and is recommended when the debugging phase includes the use of a process debugger, such as **sdb** or **pi**.

It is also possible to specify variable assignments that appears in the make file via the X=Y syntax. Of particular interest is CC=CC, which also causes **mkAlerter** to generate C++ code rather than C code.

See Also

readAlerterDesc

mkheader

The **mkheader** command allocates user memory for script variables.

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Description

The **mkheader** program creates an address in user memory for each script variable. This information is stored in an ***application-name def.h*** header file and is used in naming both the output file and the allocation program. The joint usage of the same header file enables the script to interact with the transaction state machine (TSM). The *-e* option specifies exact string matches.

The **mkheader** program prompts an operator to enter three types of information at the system console. The information may be entered interactively or batched together in a single file. Interactive entries are ended by entering **CONTROL + D**. The system prompts for:

- Variable names
- Header file names in order of dependency
- Structure names with header file locations

When **mkheader** is entered with an argument (limited to 7 characters) for *application-name*, an ***application-name def.h*** header file is created for the

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- It prompts the operator to enter header files that are needed to make the files covered in the third section compile. They should be named in the order of dependence. For example, if information in the header file **b.h** is needed by the header file **a.h**, header file **b.h** must be entered first and then header file **a.h**.

  Full pathnames must be given. The file **mesg.h** and the structure mbhdr are common to all scripts and are entered automatically.

  The header files can be stored in a batch file. The batch file could contain the following header files:

  #include “/att/msgipc/dbcom.h”
  #include “/att/include/shmemtab.h”
  #include “/att/msgipc/tsm stop.h”
  #include “/att/msgipc/cdata.h”

- This last prompt is used for allocating the space for each structure. It prompts the operator to enter each header file name and its structure names. For each header file, the operator enters the word "all" (if all

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As a shortcut, the input for the three prompts may be stored in another file (data file) and read in each time. For example:

mkheader *application_name* < data file

Once the header files are entered, **mkheader** writes a program called ***application_name*_aloc.c** to allocate the rest of user memory. The resulting source code is automatically compiled, using **mkheader.a** library functions, and then executed. This adds the remaining structure definitions to the ***application_name def.h*** header file. TSM does not allow a script to use more than 50,000 bytes of user memory. Scripts that exceed this limit are not run when data beyond the limit are accessed.

Files

/vs/bin/vs/mkheader
/vs/bin/vrs/mkheader.a

Examples

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console input: **mkheader** <*application_name*>

FIRST PROMPT: Type in the variables you need space for according to the following format:

type name [length]

Example 1: int yn
Example 2: char dg 20

(End input with CTRL-D)

Variable?: char dg 20
Variable?: int yn
Variable?: short cid
Variable?: int iom

Variable?: (CTRL-D)

SECOND PROMPT: Please enter any dependency files that the header files in the next section will need in order to compile. Use full path names. (End input with CTRL-D)

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```
Header file?: /att/msgipc/tsmdipappl.h
Structures or all?: dowj
Header file?: (CTRL-D)

Compiling:    application-name aloc.c
Running:   application-name aloc
Output is called: application-name def.h
```

This is the final *application_namedef.h* file produced by this example.

```
/*****PRE-ALLOCATION OF USER SPACE *****/

#define DG:0
#define YN:20
#define CID:24
#define IOM:26

/***** DOWJ STRUCTURE *****/

#define DOWJ:30
#define RCODE:30
```

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In this second example, the command line includes a data file from which the system gets the information usually entered by the users in response to system prompts.

The data file, called “data” in this example, contains the following information:

```
char name 20
int answer
short reply
^D
/att/include/shmemtab.h
^D
/att/msgipc/cdata.h
Day_pntr cdata
^D
```

The following appears on the screen:

```
Conversant% mkheader test6 < data
```

Type in the variables you need space for according to the following format:

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Variable?:
Variable?:
Variable?:
Variable?:

Please enter any dependency files that the header files in the next section will need in order to compile. Use full path names. (End input with CTRL-D)

File name?: File name?:

Enter the header file names and structure names needed to create the def.h file. Use full path names. (End input with CTRL-D)

Header file?: List of structures or all?:Header file?:

Compiling /usr/has/another/test6_aloc.c

Running /usr/has/another/test6_aloc

Output is called /usr/has/another/test6def.h

I am now checking for any duplicate defines that will cause problems.

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```
/******* DAY_PNTR STRUCTURE *******/

#define DAY_PNTR 26
#define FILE_FIRST 26
#define REC_FIRST 28
#define FILE_LAST 30
#define REC_LAST 32
#define SZDAY_PNTR  8

/******* CDATA STRUCTURE *******/

#define CDATA 34
#define SCRIPT 34
#define CHAN 50
#define EQUIP 52
#define STARTTIME 54
#define STOPTIME 58
#define EV0 62
#define EV1 66
#define EV2 70
```

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```
#define EV99458
#define SZCDATA428
```

Note: Make sure that all variable names are unique without respect to case because lowercase letters are changed to uppercase for the final output.

mkimage

The **mkimage** command performs a complete system backup of all the contents of the root disk file system.

Note: **Mkimage** performs only complete backups. The option to perform a partial backup of the root disk file system is no longer available.

Synopsis

mkimage

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When specifying the **mkimage** command, the voice system requests that the system be placed into single-user mode. The **mkimage** command aborts if you do not give the system permission. Once in single-user mode, you must log in again and reexecute the **mkimage** command to continue the **mkimage** process. The **mkimage** unmounts all mountable file systems and then mounts **/usr**, **/var**, **/home**, and **/home2** file systems, which are the only file systems beside the root file system and **/stand** that appear on the root disk in a standard voice system. The system then creates a list of files to archive to tape and prompts you to insert a tape.

! CAUTION:
Do not rename the file systems mentioned above as the newly named file system would not be included in the image tape.

Once the image creation has finished, the tape is verified by reading the table of contents from the tape and comparing it with the original list of files used to create the tape. If any errors are found, you see the following message that directs you to check for specific files for further information about the failure:

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actually written to the tape. $DIFFOUT contains the difference between these two files.

Analysis of these files may help in understanding the nature of the failure.

Also, be sure you are using the supported cartridge type and that your tape drive is being cleaned regularly. Execute the **-init 6-** command to return to multiuser mode.

The **mkimage** command then returns the voice system to multiuser mode by rebooting. If no errors are found, you are prompted to make a note of the file system partition sizes after the voice system returns to multiuser mode.

Note: You do not get a warning from the voice system before it reboots to return to multiuser mode.

Note: The **mkimage** command can run anywhere from 45 minutes to one or more hours creating the image tape. Several tapes could be required depending on the amount of space used in the root disk file systems.

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Example

The following example backs up the **root** and **usr** file system to cartridge tape:

mkimage

newscript

The newscript command updates the changes to all currently assigned scripts.

Synopsis

newscript

Description

The **newscript** command notifies the TSM and CDH processes that an existing script in the **/vs/traps** directory has been changed. After **newscript**

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Example

The following example notifies the TSM and CDH processes that an existing application in the directory **/vs/trans** has changed.

newscript

pkgadd

The **pkgadd** command transfers a software package to the voice system.

Synopsis

pkgadd [-n] [-a admin] [-d device] [-R rootpath] [-r response] [pkginst1 [pkginst2] ...]

pkgadd -s spool [-d device] [pkginst1 [pkginst2] ...]]

Description

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The pkgadd command has the following parameters:

Note: When executed without options, **pkgadd** uses **/var/spool/pkg** (the default spool directory).

When transferring a package to a spool directory, the -r, -n, and -a options cannot be used.

- **-a** — Define an installation administration file, admin, to be used in place of the default administration file. The token none overrides the use of any admin file, and thus forces interaction with the user. Unless a full path name is given, **pkgadd** looks in the **/var/sadm/install/admin** directory for the file.
- **-d** — Install or copy a package from device. Device can be a full path name to a directory or the identifiers for tape, floppy disk, or removable disk (for example, /var/tmp or /floppy/floppyname). It can also be a device alias (for example, /floppy/floppy0).
- **-n** — Installation occurs in noninteractive mode. The default mode is interactive.

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- **-r** — Identify a file or directory that contains output from a previous pkgask session. This file supplies the interaction responses that would be requested by the package in interactive mode. Response must be a full path name.

Note: The **-r** option can be used to indicate a directory name as well as a filename. The directory can contain numerous response files, each sharing the name of the package with which it should be associated. This is used, for example, when adding multiple interactive packages with one invocation of **pkgadd**.

Each package needs a response file. If you create response files with the same name as the package (that is, pkinst1 and pkinst2), then name the directory in which these files reside after the -r.

- **-R** — Define the full path name of a subdirectory to use as the rootpath. All files, including package system information files, are relocated to a directory tree starting in the specified rootpath.
- **-s** — Reads the package into the directory spool instead of installing it.

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See also

pkginfo
pkgrm

pkginfo

The **pkginfo** command displays software package information.

Synopsis

pkginfo [-q | -x | -l] [-p | -i] [-r] [-a arch] [-v version] [-c category1, [category2 [, ...]]] [pkginst [, pkginst [, ...]]]

pkginfo [-d device] [-R rootpath] [-q | -x | -l] [-a arch] [-v version] [-c category1 , [category2 [, ...]]] [pkginst [, pkginst [, ...]]]

Description

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pkginfo displays information about software packages that are installed on

Without options, **pkginfo** lists the primary category, package instance, and the names of all completely installed and partially installed packages. It displays one line for each package selected.

The parameters for the **pkginfo** command are:

Note: The -p and -i options are meaningless if used in conjunction with the -d option.

The options -q, -x, and -l are mutually exclusive.

- -a — Specify the architecture of the package as arch.
- -c — Display packages that match the category. Categories are defined in the category field of the **pkginfo** file. If more than one category is supplied, the package needs to match only one category in the list. The match is not case specific.
- -d — Define a device on which the software resides. Device can be an absolute directory path name or the identifiers for tape, floppy disk, removable disk, and so forth. The special token spool may be used to

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- pkginst — Specify the package instance or list of instances to be installed. The token all may be used to refer to all packages available on the source medium. The format pkginst.* can be used to indicate all instances of a package.
- -q — Do not list any information. Used from a program to check whether or not a package has been installed.
- -r — List the installation base for relocatable packages.
- -R — Define the full path name of a subdirectory to use as the root path. All files, including package system information files, are relocated to a directory tree starting in the specified root path.
- -v — Specify the version of the package as version. All compatible versions can be requested by preceding the version name with a tilde (~). Multiple white spaces are replaced with a single white space during version comparison.
- -x — Designate an extracted listing of package information. The listing contains the package abbreviation, package name, package architecture

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pkgrm

The **pkgrm** command removes a software package from the voice system.

Synopsis

pkgrm [-n] [-R root dir] [-a admin] [pkginst1 [pkginst2] ...]

pkgrm -s spool [pkginst]

Description

pkgrm removes a previously installed or partially installed package from the system. A check is made to determine if any other packages depend on the one being removed. If a dependency exists, the action taken is defined in the *admin* file.

The default state for the command is in interactive mode, meaning that the system displays messages during processing to allow the administrator to confirm the actions being taken. Noninteractive mode can be requested with

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Options

The **pkgrm** command has the following parameters:

- **-n** — Noninteractive mode. If there is a need for interaction, the command exits. Using this option requires that at least one package instance be named when the command is invoked.
- **-R** — Define the full path name of a subdirectory to use as the root path. All files, including package system information files, are relocated to a directory tree starting in the specified root path.
- **-a** — Use the installation administration file, *admin*, in place of the default *admin* file.
- **-s** — Removes the specified package or packages from the directory spool.
- **pkginst** — Specifies the package to be removed. The format **pkginst.*** can be used to remove all instances of a package.

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See also

reinitLog

The **reinitlog** command is the control program and is used to inform **logdaemon** that a new config file is to be used.

Synopsis

reinitLog

Description

The **reinitlog** command is used during the procedure of creating a new logger message destination. It sends a message to the **logdaemon** that informs it that a new config file is to be used. The **reinitlog** command causes the **logdaemon** to reread the configuration file and reopen the various logging files.

Files

$LOGROOT/Config The configuration file which defines destinations.

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remove

The **remove** command places a unit in the manual-out-of-service state.

Synopsis

remove <*unit*> <*number*> <immed> <min_delay> [-i] [-n]

rem <*unit*> <*number*> <immed> <min_delay> [-i] [-n]

Description

The **remove** command is used to remove a unit from service when its temporary state is idle. It changes the permanent state of the unit to manual-out-of-service (MANOOS). It does not remove a unit that has a temporary state of busy. If a unit must be interrupted immediately or appears to be stuck busy, use the **rem <*unit*> <*number*> <*immed*>** command.

The parameters for the **remove** command are:

- **<*unit*>** — Identifies the unit. The choices are “channel” or “card.”

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- **-n** — Disables prompting from the system whether to wait until a conflict is resolved (see the **-i** option below) or to terminate the request to remove.
- **-i** — Enables secondary command registration. If T1 diagnostics are being run, this option allows the removal of another card. If **-i** is used and another maintenance command is being run (**remove**, **detach**, **attach**, **restore**, **diagnose**), the request to **remove** card is blocked and a message is printed to the screen. If **-i** is not used and any maintenance command is being run, the request to **remove** card is blocked and a message is printed to the screen.

  If the command is permitted to run, a check is made to see if the command is in conflict with another. A command is in conflict if the card or card associated with it:

  ~ Is the T1 card being diagnosed
  ~ Will cause a change in the existing TDM bus master assignment
  ~ Has an interdependency with the T1 card being diagnosed (for

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- **immed** — Removes a card or channel even if it is in use. Active calls are likely to be dropped when this option is specified. This option is necessary when the card or channel must be removed from service as soon as possible, and you are willing to terminate any active calls. You may also want to use this option to get control of a channel that is hung and not providing useful service.
- **min_delay** — Used to avoid waiting for channels to be granted. This option applies to **remove chan** and **remove card** requests that are removing network interface channels, for example, T1. This option specifies to minimize the delay in removing channels from service by not waiting for the channel to be granted. This option speeds up execution of the **remove** command, especially when a large number of channels are currently active.

  When using this option, you must display the status of the channels with the **display card** command to determine when they are in the MANOOS state. This option can be used with or without the *immed* option and improves the response time in either case.

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To delete out of the command, press **DELETE**. If this does not stop the command, you may need to press **CONTROL** and backslash simultaneously. If, while running **remove**, you want to abort the command, a message similar to the following may appear:

```
At the user's request, administration of the following
cmd(s) has been interrupted.

CARD NUMBERS: <card numbers>

To assure proper operation of the identified card(s),
run diagnostics at the earliest opportunity.
```

When **remove** is aborted, you should run diagnostics on all cards being administered to ensure they are returned to a fully functional state.

Example

The following example removes card 0 from service.

```
rem card 0
```

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See Also

attach
detach
restore

restore

The **restore** command restores a unit to the in-service state.

Synopsis

restore *<unit> <number> [-i] [-n]*

Description

The **restore** command is used to change the permanent state of a unit from manual-out-of-service (MANOOS) to in service (INSERV). The specified unit is placed in the INSERV state unconditionally, unless its current state is not

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a port of card#. If *port#* is not given, all ports of the card specified are restored. If no card number or channel number is given, the system displays a syntax message.

- ***-n*** — Disables prompting from the system, whether to wait until a conflict has been resolved (see the *-i* option below) or to terminate the request to restore.
- ***-i*** — Enables secondary command registration. If T1 diagnostics are being run, this option allows "restoring" of another card to be performed. If *-i* is used and another maintenance command is being run (**remove**, **detach**, **attach**, **restore**, **diagnose**), the request to **restore** card is blocked and a message is printed to the screen. If *-i* is not used and any maintenance command is being run, the request to **restore** card is blocked and a message is printed to the screen.

  If the command is permitted to run, a check is made to see if the command is in conflict with another. A command is in conflict if the card or card associated with it:

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T1 diagnostics are executing online tests and a conflict is detected, the **restore** command is blocked. If T1 diagnostics are executing offline tests and a conflict is detected, the user is asked whether to wait until the conflict is resolved or to terminate the request to restore.

To delete out of the command, press **DELETE**. If this does not stop the command, you may need to press **CONTROL** and backslash simultaneously. If, while running restore, you want to abort the command, a message similar to the following may appear:

```
At the user's request, administration of the following
cmd(s) has been interrupted.

CARD NUMBERS: <card numbers>

To assure proper operation of the identified card(s),
run diagnostics at the earliest opportunity.
```

When **restore** is aborted, you should diagnostics on all cards being administered to ensure that they are returned to a fully functional state.

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The following example restores all cards to service.

restore card all

See Also

attach
detach
remove

retireAlarms

Syntax

retireAlarms [**-t**] [**-u** ***user***] [**-r** ***reason***] [**"*selector*" ... | ALL**]

Description

Variables include:

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- ***selector*** — Generally a regular expression identifying the alarms to be retired, though it can also be index numbers.
- **ALL** — Retire all currently active alarms.

Normally, **retireAlarms** operates in an interactive mode. If started with no arguments, it displays the currently active alarms and allows the user to select those to be retired. Selection can be by index number or by use of a matching pattern. To increase the number of alarms that can be displayed on a single screen, the time the alarm happened is not printed unless the -t flag is specified.

The **retireAlarms** command can be used as a line command if both a reason for the retiring is supplied and a selector. A *selector* is either a regular expression or a set of indices in the list which are to be retired.

A set of indices can be individual indices, optionally separated by white space or commas, or ranges of the form "m-n", where "m" is less than "n". For example, **2**,**4-6**,**VP** retires alarms 2, 4, 5, 6, and any one with the string VP in its "key."

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rmdb

The **rmdb** command displays the state of the resource manager (RM) and modifies the debug levels.

Synopsis

rmdb *[-l]* [-s] [-u] [-d *[<range>]]* [-g *[<range>]*] [-f *[<range>]*] [-p *[<range>]*]
[-C [<range>]] [-T [<range>]] [-P [<range>]] [-i [<interval>]]
[-tL [<levelMask>]] [-tA [<levelMask>]] [-tc <channel>] [-tC <channel>]

Description

The **rmdb** displays the state of the resource manager and modifies the debug levels. The valid syntax for ranges is as follows:

value [-value] [, value] | [value-value]*

Specifying a value an odd number of times indicates that it will be displayed.

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Table 35. Argument Description for rmdb

Variable	Definition
-l	Takes the rmLOCK while sampling data structures. This ensures that the sample is internally consistent. However, if the RM data structures are left in a locked state, this causes the rmdb to block until they are unlocked. (Leaving the rm data structures locked is a system fault). Also, other processes that attempt to use the RM data structures are temporarily blocked until **rmdb** completes its query.
-s	Prints the values of the RM parameters and debug variables.
-u	Prints the function's usage statistics.
-d	Prints device table entries by device number.
-g	Prints out group lists (by index in the group table).
-f	Prints out the function table (by index in the function table).
-p	Prints out the packfile table (by index in the packfile table).

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Table 35. Argument Description for rmdb

Variable	Definition
-T	Prints out the channel touchtone queues (by channel number).
-P	Prints out channel profiles (by channel number).
-i	Repeats the display, with a sleep interval of the specified number of seconds between samples.

2 of 2

The **-tL <levelMask>** sets the trace level mask. Supported masks are shown in Table 36.

Table 36. Rmdb Trace Level Masks

Mask	Value
RM_TL_ERROR	0x1

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Table 37. Rmdb Trace Area Mask

Mask	Value
RM_TA_TIMER	0x1
RM_TA_RESOURCE	0x2
RM_TA_INPUT	0x4
RM_TA_PROFILE	0x8
RM_TA_MTC	0x10
RM_TA_MSG	0x20
RM_TA_INTERNAL	0x40

The **-tc <channel>** sets the trace channel low end.

The **-tC <channel>** sets the trace channel high end.

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show_sys

The **show_sys** command allows you to retrieve configuration and administration information from customer sites.

Synopsis

/vs/bin/tools/show_sys [-l]

Description

The following information can be retrieved with the **show_sys** command:

- UNIX version machine type
- Installed software
- Memory
- Configuration of hard disks
- Free space in UNIX file system

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- Oracle database tables
- Directory files in **/oracle/dbs**
- Cron information for root
- Local and remote database information
- ASP driver (speech card) version
- DNIS information (if T1s are present)
- T1 card information (if T1s are present)
- Device Information
- SAR Snapshot
- Parallel Printer Information
- UUCP information
- Devices file

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- CCA report for the previous week
- Call data report for a specific day of the previous week
- Traffic report for a specific day of the previous week

The *-l* option prints details about each of the information that can be retrieved with the **show_sys** command.

Example

show_sys

soft_disc

The **soft_disc** command sends a disconnect to a script on a channel or channels.

Synopsis

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channelEnd> be sent interrupt messages. If no script is running on the channel or if TSM does not own the channel, no action is taken for the channel.

The **soft_disc** *command* waits for a response from TSM. When it exits, TSM has acted on all the requests for all the channels by sending disconnects to the scripts or rejecting the requests. Scripts running on the channel receive the ESOFTDISC event.

Return Values

If the **soft_disc** is successful, a 0 value is returned. If any other value than 0 is returned, the **soft_disc** command completely or partially failed. If **soft_disc** returns a value of 2, then **dip_int** command failed due to temporary condition. In this case, the user should attempt the **dip_int** command again.

Example

The following example requests that TSM send interrupt messages to

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See Also

dip_int

soft_szr

The **soft_szr** command starts a script on a channel.

Synopsis

soft_szr <*channelStart-channelEnd*> <*script*>

Description

The **soft_szr** command can be used to start a script on a channel. The **soft_szr** command sends a message to TSM requesting that a script be started on a channel. If the channel is in use, the script is not started. **Soft_szr** waits for a response from TSM. When **soft_szr** exits, TSM has either accepted the request and started the script or rejected the request.

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busy, the command fails. If you specify a range of channels and one or more of the channels is busy, the command seizes the idle channels but fails for the busy channels.

Example

The following example starts the script “sodapop” on channels 0 through 4.

soft_szr 0-4 sodapop

The following example starts the script “test1”’ on channel 10.

soft_szr 10 test1

Return Values

If the **soft_szr** is successful, a 0 value is returned. If any value other than 0 is returned, the **soft_szr** command completely or partially failed. If **soft_szr** returns a value of 2, the **soft_szr** command failed due to temporary condition. In this case, the user should attempt the **dip_int** command again.

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spadc

The **spadc** command collects data on the signal processing resources.

Synopsis

spadc ***[-m min] [-s sec] [-D dir]***

Description

The **spadc** command executes a program that collects data on the voice system signal processing resource utilization. Data is sampled every *-s* seconds, and average and peak measurements are written to a file called **mm-dd-yyyy** for the day of the month and year on which the command was executed (for example, 09-12-1997). The file is written in the *-D* directory every *-m* minutes.

The spadc command uses the following options:

- ***-m*** minutes; used to specify how many minutes of data are

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Example

spadc -m 20 -s 10

This command collects the signal processing resource data in 10-second increments for a total of 20 minutes.

See Also

spar

spar

The **spar** command is the signal processing resource reporter.

Synopsis

spar ***[-ablmp] [-t min] [-f file]***

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Description

- ***-l*** — feature licensing
- ***-m*** — mean (average) data
- ***-p*** — peak data
- ***-t*** — time; used to specify how many minutes of data are summarized in each report line. The value must be 5 to 60, in increments of 5 (for example, 5, 10, or 15, and so on). The default is 20. To ensure valid data, the value for -t should be equal to or greater than the time increment specified for data collection by the **spadc** command.
- ***-f*** — file; used to specify an input data file. If no -f argument is given, the **/var/adm/spa/mm-dd-yyyy** file is used for the current day. If the data file is not in **/var/adm/spa**, you must provide a full pathname to the input data file.

Examples

Note that values of “NA” in a report indicate that data was not available for that period, for example, if **spadc** data collection was not active, or if the

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```
Signal Processing Activity Report(Peak Percent Usage By
Algorithm) 10/20/1997

CARD  5   STATE: Inserv   CLASS: Signal_Processor(SP)
O.S.INDEX:  0

          NAME:  AYC2      OPTIONS: slave,tdm1

          FUNCTION: play+code
```

	brd	wwr	fwr	echo	cca	tts	dpr	play	code	celp	fax
00:20	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
00:40	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
01:00	0	0	0	0	0	0	0	0	0	0	0
	.	.	.	.	.	.	.	.	.	.	.
	.	.	.	.	.	.	.	.	.	.	.
	.	.	.	.	.	.	.	.	.	.	.

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10:00	57	28	0	9	11	10	0	0	0	0	0
10:20	68	37	0	11	13	8	0	0	0	0	0
10:40	69	42	0	10	9	8	0	0	0	0	0
11:00	71	44	0	11	10	9	0	0	0	0	0
11:20	66	42	0	4	10	11	0	0	0	0	0
11:40	91	58	0	15	8	10	0	0	0	0	0
12:00	80	47	0	12	16	5	0	0	0	0	0
12:20	77	39	0	10	15	13	0	0	0	0	0

Column headings reflect percent usage for the following:

- brd — All algorithms allocated to the board. Note that in a given row, the peak percentage for the board may be slightly different than the sum of the algorithm percentages because the peaks may not have occurred during the same interval. For example, if the **spadc** command collects data at 5-minute intervals, and the **spar** report displays the peak

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- echo — Echo cancellation
- cca — Call Classification Analysis
- tts — Text-to-Speech
- dpr — Dial Pulse Recognition
- play — Play speech
- code — Record speech
- celp — Record speech with CELP algorithm
- fax — FAX

spar -l

This command creates a report showing average percent usage of licenses for each algorithm. A partial sample output is shown below.

```
RTU Report (Average Percent License Utilization Across System)
10/23/1997
```

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01:00	0	0	0	0	0	0
	.	.	.	.	.	.
	.	.	.	.	.	.
	.	.	.	.	.	.
07:00	23	0	0	0	0	2
07:20	23	0	0	0	0	2
07:40	26	0	0	0	0	3
08:00	12	0	21	0	0	0
08:20	NA	NA	NA	NA	NA	NA
08:40	NA	NA	NA	NA	NA	NA
09:00	31	0	14	0	0	0
09:20	32	0	14	0	0	1
09:40	19	0	15	0	0	0

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- tts — Text-to-Speech
- dpr — Dial Pulse Recognition
- flex — FlexWord recognition
- whole — WholeWord recognition
- swtts — Software Text-to-Speech
- fax — FAX

See Also

spadc

spsav

The **spsav** command backs up speech (SSP only).

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Description

The **spsav** command backs up the specified talkfile number, phrase number, listfile, or phrase and talkfile of the speech. Only speech in the speech file system can be backed up using the **spsav** command.

The parameters for the **spsav** command are as follows:

- ***-O file*** — This parameter specifies the output device. Typically, this is cartridge tape (**/dev/rmt/c0s0**).
- ***-v*** — This parameter is the verbose flag that gives a running commentary of speech being saved.
- ***-t*** — This parameter is the tape flag. This is required for back up to cartridge tape.
- ***[talkfile <list>]*** — This parameter specifies the list of talkfiles to be backed up, specified as a single digit, a range m-n, or the word **all**. If no value is given, the default is **all**.
- ***[phrase <list>]*** — This parameter specifies the list of phrases to be

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The **spsav** command invokes an interactive program asking you to insert and remove cartridge tapes periodically. If the *-v* option is used, the system displays information about each step of the back up.

Example

The following example saves listfile “list.cabnt” from cartridge tape:

spsav -O /dev/rmt/c0s0 -v -t listfile list.cabnt

spStatus

The **spStatus** command displays information about the pack file running on an SP card.

Synopsis

spStatus ***[-b SP-index] [-i interval] [-c count] [-r] [-B]***

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-b SP-index	Index of the SP card to be examined.
-i interval	Interval between examinations of SP status Minimum interval is 2 seconds. The default is 60 seconds
-c count	Number of times SP status is to be examined. The default is 1.
-r	Reset the executive and task counts before starting.
-B	No bell when running in iterative mode.

The **spStatus** *command* can be run in once, which is the default, or an iterative mode. In the iterative mode, it prints the changes between each successive examination of the values stored in the **spcon** structure in shared memory.

Sample Format

The following is an example of the sample output if **spStatus** is against the

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```
          Free Actions: 46
          Busy Actions: 4
        Active Letters: 4
             Free DSPs: 2
           Broken DSPs: 0
             Busy DSPs: 0
      Run Queue Length: 0
    Sleep Queue Length: 4
    Running Process ID: 5
  Running Action Index: 3
          DSP Requests: 4
     RPC Requests Done: 0
   RPC Requests Queued: 0
  RPC Requests Discard: 0
           Exception #: 0x0 0-Reset
         Exception Adr: 0x0
               Routine: 0x0
  PC at last TDM Intr: 0x99f05b62
```

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```
Work Search Loops * 1000: 53
            TDM Overruns: 0
 TDM Servicings Deferred: 0
        Letters Received: 8
            Letters Sent: 0
        Letters Deferred: 0
       Letters Discarded: 0
           Executive Time: 57
               Idle Time: 489
Task[6]: 1156
<< Mailbox Information >>
Index   1st Empty   1st Full
0 -> PC00
1 <- PC00
2 <- PC4040
3 <- PC00
4 <- PC00
5 <- PC00
```

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```
          Run Queue Length: 1(+1)
        Sleep Queue Length: 3(-1)
        Running Process ID: 4(-1)
      Running Action Index: 2(-1)
       PC at last TDM Intr: 0x99f14024
       PC at last DSP Intr: 0x99f08154
                 DSP Count: 2710(+463)
Work Search Loops * 1000: 57(+4)
            Executive Time: 58(+1)
                 Idle Time: 537(+48)
Task[6]: 1421
```

The following is a brief description of each element of the display:

Romstate, Romcmd, Romargs

These three values are active if either the ROM is in control of the SP card or a debugger is in charge.

Ramstate, Pack Features, Pack Type

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Bootcnt is incremented each time the ROM restarts. Only diagnostics currently alter it in any other way. SPtime is the time in 16 millisecond increments since the pack started. If **spStatus** is running in recursive mode, this value is not changing, and the debugger is not active, the following warning is generated:

```
"No Clock! Check TDM master"
```

This means that either there is no TDM master and hence no TDM interrupts, or the pack file is stuck at priority level 6 or 7 and so all interrupts are blocked. In the former situation, check your T1 cards and make sure that one of them is the TDM master. In the latter case, you have a bug. Use **msdb** and examine the pack file. **SPusage** is the current load factor on the SSP card. This is the last value of meaning if the pack is an original-style pack. The remaining information applies only to SSP Executive packs.

Debug ID, spFreeMemory

Debug ID is set to the pid of the UNIX process currently debugging this SP card. It is used to avoid collisions between people attempting to debug code

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Busy Actions

The number of *Action* structures currently assigned to time slots.

Active Letters

The number of letters being carried in *Chainmail* structures for long time processing via *Action* structures.

Free DSPs, Broken DSPs, Busy DSPs

The number of DSP processors available to do work, broken, and assigned to work.

Run Queue Length, Sleep Queue Length

The number of processes waiting to run and the number waiting for some event to wake them up.

Running Process ID, Running Action Index

The process ID of the SP Executive process currently running and the index of the *Action* structure currently active.

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RPC Requests Done, RPC Requests Queued, RPC Requests Discard

The number of remote procedure call requests that have been performed, the number that are waiting to be done, and the number of requests that had to be discarded before the backlog was too large.

Exception #, Exception Adr

The 680X0 hardware exception number and the name of the exception that has stopped the 680X0 processor and either sent it to the ROM or to the debugger and the address where the exception took place. These can be invaluable in case of a fatal error.

Routine

Currently not used.

PC at last TDM Intr, PC at last DSP Intr

Addresses at which the TDM and DSP last interrupted.

Info Flags

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CTL Flags

The current value of the CTL flags. These are used to control optional code within a pack. See *spCtlFlags* for further information.

Timer Requests

The number of timer requests that have been made.

Active Timers, Completed Timers, Killed Timers

The number of timer requests currently outstanding, the total number of timer requests that have run to completion, the number of timer requests that were removed prior to execution. If these values do not total up properly, there is also a warning indicating that there is trouble.

Work Search Loops

This is the number of times divided by 1000 that the SP Executive has gone through its base level work search loop, trying to find something productive to do. The change in the number goes down as the SP Executive becomes busier and busier doing productive work.

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TDM Servicings Deferred

This is the number of times that a TDM servicing was deferred because the TDM interrupt came in on top of a DSP interrupt for a time slot. It is not a serious problem. It just indicates that the hardware is busy and conflicts are being resolved. It can be a potential area of difficulty if the DSP routine is too slow and the TDM overruns while it is waiting to be serviced.

Letters Received, Letters Sent, Letters Deferred, Letters Discarded

This is the number of letters received from the PC, the number of letters sent to the PC, the number of letters going to the PC that had to be temporarily stored in the overflow area because the PC was not keeping up, and the number of letters that even the overflow area could not handle and had to be discarded. Going into the overflow area is an indication of potential trouble, but is not serious if the duration is short. If the SP code continues to generate too many letters in too short of a period of time, then it becomes a serious problem. The same thing can happen if the PC cannot keep up.

Executive Time, Idle Time, Task[]

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Mailbox Information — Index, Empty, Full

The mailbox information is rudimentary information about activity within each mailbox. It does not tell you how many letters have been sent via each mailbox. However, it does tell you whether the mailbox is empty (1st Empty == 1st Full) and if the values are changing from one display to the next, you know mail is passing through that mailbox. Keep in mind that mailbox 1, from the PC, is now reserved by the kernel and is used by the ioctl() form of mail sending for all processes other than the limited number of processes that directly own mailboxes.

In iterative mode, only those lines whose values have changed since the list display are listed. On decimal entries, the delta value since the last time is also printed.

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spVrsion

The **spVrsion** command prints the version of the SSP driver currently installed on a machine.

Synopsis

spVrsion

Description

The **spVrsion** command prints which version of the SP driver is installed. This can be either the 12-MB version or the 44-MB version.

start_vs

The **start_vs** command brings the system up to a fully operational state.

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the **start_vs** command to start it again. The **start_vs** also should be used if the system was rebooted or powered down after **stop_vs** was used.

The **start_vs** command checks to see if the user stopped the system with the **stop_vs** command. The **start_vs** command places all cards placed in the manual-out-of-service (MANOOS) state with the **stop_vs** command in the in-service (INSERV) state.

You must be logged on to the system console as *root* to use the **start_vs** command.

Since the **/vs/data/spchconfig** file cannot be edited while the voice system processes are running, it is a good idea to check the value of nbufs in the **/vs/data/spchconfig** file before executing the **start_vs** command. The value of nbufs defines the number of speech buffers. For the voice system to operate properly, nbufs must be set to 2.5 times the number of active channels.

Example

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stop_vs

The **stop_vs** command gracefully stops the voice system software.

Synopsis

stop_vs ***[time_out] [-n]***

Description

The **stop_vs** command gracefully stops the voice system software. If the system is receiving calls, **stop_vs** waits for approximately 3 minutes before it unconditionally stops the software. By waiting, the system allows callers to finish their transactions. The **stop_vs** command disables incoming call recognition on all cards to prevent them from being reactivated by an incoming call.

The *time_out* option is the time to wait before the voice system is stopped. The default value for this option is 180 seconds. The *-n* option prompts you

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sure to execute **start_vs** after logging in as *root*. This ensures that the system is returned to the state it was in before it was rebooted.

Example

The following example stops the voice system software:

```
stop_vs
```

See Also

start_vs

striphdr

The **striphdr** command strips voice or code headers from a speech file (SSP only).

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Synopsis

code headers are required for speech that is to be used with the voice system.

See Also

addhdr

sysmon

The **sysmon** command executes a program that monitors incoming telephone lines and the associated cards to see that they are functional.

Synopsis

sysmon *<page number>*

Description

The **sysmon** command verifies that each incoming telephone line and its

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Once the channels and service are assigned, enter the *sysmon* command followed by the number of pages, or screens, you want to see. Each page displays 120 to 140 channels.

The resulting display shows all channels and their current states. Note that only equipped channels can be in the IDLE or MOOS state, while unequipped channels are followed by dashes (--).

Enter the telephone number for the touchtone telephone. Watch the display on the monitor and note the channels that receive the call. Follow the instructions provided by the voice system. Enter **0000** to end the test.

Example

The following example shows page four of the system monitor display.

sysmon 4

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Description

The **tas** command is used to assemble script instructions recorded in an ***application-name*.t file**. It produces an executable file designated ***application-name*.T**, which is stored in a table as a list of executable script instructions.

The ***-e*** option requires exact string matches for speech phrases.

The arguments must be in the order given above for the command to work properly. The directory search specified by the arguments are *I* (include file) and *T* (listfile). No space is allowed between the *-I* and *-T* flags and their path names, but space is allowed after the *-e* flag. Note that the *-I* option to **tas** is interpreted by cpp(1).

The remaining arguments are:

- ***-U <name>*** — Remove any initial definition of name, where name is a reserved symbol that is predefined by the particular preprocessor (this option is interpreted by cpp(1)).
- ***-D <name>*** and ***-D <name-def>*** — Define *name* with value *def* as if by a

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- ***-H*** — Print, one per line on standard error, the path names of included files (this option is interpreted by cpp(1)).
- ***-o <output_file>*** — The name of the output file. The default is **out.T**.

Note that the maximum number of literals per script allowed by the **tas** command is 450. If there are more than 450 literals in a script, the system displays the error message “literal table overflow.” Additional limitations enforced by the **tas** command are (whichever occurs first in a list file):

- 1,000 phrases
- 4,000 words
- 40,000 characters

If more phrases are needed by an application, use multiple list files and tfile instructions within the script.

Note: If your script contains a large number of define statements, **tas** may report messages such as the following during compilation:

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Files

/vs/bin/tas

Examples

tas example.t

The program includes applicable header files and replaces literal definitions with corresponding numbers to produce an assembled version of the script. The assembled code is stored on disk under the label **example.T**. The unassembled instructions are found in the file **/var/applN/trans/example.t**.

tas example.t -I/var/include -T/var/speech

In addition to performing the same functions described for the previous example, tas checks the files in **/var/include** when processing include statements and the file in **/var/speech** when processing T-file statements.

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Synopsis

trace ***[name]...[chan <,range>]...[card <card #[.port#>]]...[area [,area...]...]***
[level [,level...]...][date] [tracelog | startlog]...[sleep <sleeptime>]

Description

The **trace** command prints trace messages to the standard output device (stdout) according to specified options. Executing trace also causes trace output to be logged to the trace shared memory buffer or to the trace log.

When trace is specified with *name*, all process-specific trace messages from process *name*, are printed. Process-specific trace messages are printed regardless of which channels that process may own or on which channels they are operating.

When trace is specified with *chan* or *card* options, all channel-specific messages, from any process are printed. The *card* option is applicable only to network interface cards (that is, cards that have channels). The *card* option is a special case of the channel option.

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integers ranging from 1 to 32. Areas 1 through 16 are available for user applications. The voice system reserves areas 17 through 32.

Table 38 describes the trace area arguments.

Table 38. Trace Area Arguments

Argument	Description
AS (area 17)	Trace advanced service operations such as TTS and speech recognition.
EM (area 18)	Trace event management operations.
IN (area 19)	Trace caller input operations including touchtone and speech recognition.
PM (area 20)	Trace parameter management operations.
RM (area 21)	Trace resource management operations.
SE (area 22)	Trace script execution. This includes trace entries made implicitly by Script Builder applications and through *tas(1)* scripts via the *trace(3TSM)* command.

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Table 38. Trace Area Arguments

IL (area 27)	Trace internal library operations.
SI (area 28)	Trace script instructions. Every TSM script instruction displays a trace message.
AD (area 29)	Trace administration operations.
BM (area 30)	Trace bus management operations.
OT (area 32)	Trace old trace instructions. All old trace messages are placed in this area.
ALL (area 1–32)	Trace all areas.

2 of 2

The default, if ***area*** is omitted, is all areas except SI (area 28). Trace areas may also be specified numerically with lists and ranges. For example, the following is legal:

trace chan 5 area 1-7,10 TS

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command with no arguments. The current voice system levels (areas 1 through 32) are defined as shown in Table 39.

Table 39. Trace Level Arguments

Argument	Description
U (levels 1–16)	Trace all user levels.
AE (level 17)	Trace internal application error messages.
AG (level 18)	Trace internal application general messages.
AX (level 19)	Trace internal application enter/exit messages.
A (levels 17–19)	Trace all internal application levels.
FE (level 20)	Trace user-callable function error messages.
FG (level 21)	Trace user-callable function general messages.
FX (level 22)	Trace user-callable function enter/exit messages.

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Table 39. Trace Level Arguments

P (levels 23–25)	Trace all process interface function levels.
IE (level 26)	Trace error processing operations.
IG (level 27)	Trace internal library operations.
IX (level 28)	Trace script instructions. Every TSM script instruction displays a trace message.
I (levels 26–28)	Trace script instructions. Every TSM script instruction displays.
RH (level 29)	Trace RM Helper function enter/exit messages.
RE (level 30)	Trace RM Helper function error messages.
RG (level 31)	Trace RM Helper function general messages.
RX (level 32)	Trace RM function enter/exit messages.
R (levels 29–32)	Trace all RM Helper and RM function messages.
S (level 17–32)	Trace all irAPI system levels.

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If the *tracelog* option is specified, all trace messages are logged to the trace log file and sent to *stdout*. If *startlog* is specified, tracing is done to the trace log but no trace output is sent to *stdout*. The trace log file can be queried for data deposited from prior executions of the **trace** command by using the **display** command with the *tracelog* option.

Trace messages can be printed with or without the date and time when they are generated. If *date* is specified, the date and time are printed with each trace message. The date and time are always printed for messages in the trace log file.

If the *sleep* argument is specified, trace will sleep *sleeptime* milliseconds between reading the trace buffer. The default is 200 milliseconds.

The **trace stop** command clears any active trace settings, ensuring that no trace output is generated to the trace log.

By default, all trace messages are saved in a trace shared memory buffer. The trace buffer is a circular buffer. If trace messages are written to the trace buffer faster than the trace command can read them, eventually the trace

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- Use the **sleep** argument of the trace command to decrease the time that trace sleeps between reading the buffer. The default sleep time is 200 milliseconds.
- Increase the size of the trace buffer by adding or modifying the line **TRACE_BUFFER_SIZE=X** in the **/vs/data/irAPI.rc** file, where **X** is the number of messages that the trace buffer can hold. The default is 256. Increasing the value of **X** should reduce the chance of losing trace messages.

⚠ CAUTION:

If you change the size of the trace buffer, you must stop and restart the voice system (**stop_vs** and **start_vs**). Otherwise, you will not be able to run trace.

Examples

The following are examples of valid level lists and ranges:

1,2 Trace levels at 1 and 2

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Note that a user input (touchtone and speech recognition) log can be implemented by the following trace command:

trace chan all area IN level F

Files

/usr/spool/log/data/trace*
/vs/data/irAPI.rc

trarpt

The **trarpt** command generates a call traffic report.

Synopsis

trarpt <*hours*> <*summarize*> <*date*>

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Description

The parameters for the **trarpt** command are:

- ***<hours>*** — Specifies the hours in which the traffic data was collected. The valid options can be a range between 0 to 23 (with 0 representing midnight and 23 representing 11 p.m.) or “all.”
- ***<summarize>*** — Indicates a traffic report or a traffic summary report to be generated. If the option is “n”, the report provides information on the total traffic volume for each channel in one-hour increments. If the option is “y,” the report is a summary report that provides information on the total traffic volume for each channel for the whole period specified in the *<hours>* parameter.
- ***<date>*** — Specifies the date the data was collected in the system. This parameter can be in the mm/dd/yy or mm/dd/yyyy format.

  If a 2-digit year argument is used, the following rules apply:

  ~ If the year argument is 70 and above, the 20th century is assumed. For example, 5/27/96 is interpreted as May 27, 1996.

  ~ If the year argument is between 00 and 69, the 21st century is

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trarpt 8-17 y 08/24/93

trarpt 8-17 y 08/24/1993

The following two examples generate a traffic report for data collected on date August 24, 1993, one entry per channel, and are equivalent command statements.

trarpt all n 08/24/93

trarpt all n 08/24/1993

unassign_permissions

The **unassign_permissions** command removes voice system security permissions for a specific user.

Synopsis

unassign_permissions <*user login*>

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Example

The following example executes the command to remove voice system security permissions.

```
unassign_permissions brown
```

See Also

display_permissions
assign_permissions

vfyLogMsg

The **vfyLogMsg** command verifies the information associated with a specific logging message format.

Synopsis

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lComp <msgnum>

Note: You cannot use the **vfyLogMsg** command to look up a message format for a message class that you have just created, but not yet installed.

The *msgnum* argument can be in any of the following four formats:

- absolute message number

  The absolute message number format would be used if you were examining compressed logging files with an editor, for example, **238**

- symbolic name

  The symbolic name is found in the associated **log{CLASS}.h** header file, for example, **SYSMSG**

- message class/relative index in class pair

- **logGEN(2)** or **GEN.2**

  This last format can be specified in two ways: **logGEN(2)** or **GEN.2** Two forms exist because the log{CLASS}(index) form must be enclosed

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The output of the **vfyLogMsg** command contains up to five different types of information about the message format:

- Interpretations of the message number

  The first block of information contains the three interpretations of the message number.

- Restored message format

  The second block of information includes the restored message format without any of the SQL field names that might have been specified in the original format.

- SQL field name information

  This information is the SQL field name information either as specified in the original format or as generated by IComp for those fields that did not have specifications in the input description. One description line exists for each argument on the machine.

- Current message priority

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The fifth block of information describes each destination bit specified in the destination bit mask, starting with the lowest order bit.

Example

lComp

See Also

logCat
logDstPri

vsdisable

The **vsdisable** command disables the automatic restarting of the voice system.

Synopsis

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Example

vsdisable

See Also

vsenable

vsenable

The **vsenable** command enables the automatic starting of the voice system at system reboot.

Synopsis

vsenable

Description

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When the **vsenable** command is run, UNIX system files are modified to allow

Example

vsenable

See Also

vsdisable

vusage

The **vusage** command displays the current load on the voice system (SSP only).

Synopsis

vusage

Description

The **vusage** command enables the voice system administrator to determine

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$ vusage

```
Max (Current) Speech Buffers used:   0   (0)
Max (Current) Chans playing/coding:  0   (0)

$
```

WARNING:
The voice system must be running to execute this command.

See Also

display chan
sysmon

wl_copy

The **wl_copy** command copies FlexWord wordlists to disk.

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absolute path names, since they will be used to load the vocabularies onto a FlexWord system.

Note: Make sure change to the directory where your FlexWord wordlists are located, usually **/att/asr/wordlists/active**.

If any of the names are directory names, the contents of the directories and any subdirectories are also copied to floppy disk.

Example

wl_copy database

wl_edit

The **wl_edit** command edits FlexWord wordlists.

Synopsis

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Audible playback is provided with Text-to-Speech so that you can hear the pronunciation of any word. You must dial into the channel specified with the -*l* option to hear the pronunciations.

Error messages are written to a small window at the bottom of the screen. Error messages are also logged to the file **/usr/tmp/wledit.output**.

The **-s <*ssp*#>** argument is used to specify which SSP circuit card to use for speech playback. Circuit cards are referenced by O.S. index displayed in the **display card** command.

The **-L *language*** argument is used to specify the language output that appears on the screen.

The **-D *directory*** argument is used to specify that the program will start in the given directory.

The ***-O*** option is for debugging purposes. It causes certain events to be recorded in the output window.

The **-I** option inhibits forced initialization of the SSP circuit cards. The **wl_edit**

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WARNING:
If the voice system is running, wl_edit will prompt you to stop the voice system before continuing.

See Also

wl_init

wl_gen

The **wl_gen** command creates data files for a FlexWord vocabulary.

Synopsis

wl_gen -L *language*

Description

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- **/vs/pack/cmp.seg.sw** — Vocabulary and model information for companion card DSPs
- **vs/pack/resource.sw** — Wordlist resource information for the resource manager

The **wl_gen** command should be called whenever there is a change to an active wordlist or when a wordlist is activated or deactivated. You need to diagnose the FlexWord SSP circuit card after using the **wl_gen** command.

The [-L *language*] argument is used to specify the language output that appears on the screen, that is, Brazilian, English, French, German, Japanese, or Spanish.

If more than 38 phonemes, including the underscore (_), are found with any word or phrase within a wordlist by the **wl_gen** command, you receive an error message. Once **wl_gen** finds an error within a wordlist, it quits looking at that wordlist, and the wordlist containing that word or phrase is not used when generating the FlexWord data files. Therefore, if you receive an error, you might have to run **wl_gen** several times to iteratively locate each error.

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The **wl_gen** command retains the wordlist numbers of any active wordlist. This means that scripts do not have to be recompiled unless they use a wordlist that was not active on the previous invocation of **wl_gen**.

Example

wl_gen

See Also

wl_edit
diagnose card

wl_init

The **wl_init** command generates an initial wordlist from a set of words.

Synopsis

wl_init ***<file>***

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example, “call Rachel” should be written “call_Rachel.” Words are case insensitive. Each line of the file will be augmented with a tab followed by the cecilbet phonetic transcription of the line.

Example

wl_init database

See Also

wl_edit

wl_install

The **wl_install** command reads FlexWord vocabularies from floppy disk.

Synopsis

wl_install

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Example

wl_install

See Also

wl_copy
wl_gen

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Glossary

Numerics

23B+D

23 bearer (communication) and 1 data (signaling) channel on a T1 PRI circuit card.

30B+D

30 bearer (communication) and 1 data (signaling) channel (plus framing channel 0) on an E1 PRI circuit card.

47B+D

47 bearer (communication) and 1 data (signaling) channel on two T1 PRI circuit cards.

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5ESS®

A Lucent electronic switching machine used to route calls through the telephone network or private branch exchange.

A

AC

alternating current

ACD

automatic call distributor

AD

application dispatch

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AD-API

adjunct products

Products (for example, the Adjunct/Switch Application Interface) that the system administers via cut-through access to the inherent management capabilities of the product itself; this is in opposition to the ability of the system to administer the switch directly.

ADPCM

adaptive differential pulse code modulation

ADU

asynchronous data unit

advanced speech recognition

A speech recognition ability that allows the system to understand WholeWord and FlexWord™ inputs from callers.

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ALERT

System alerter process

alerter

A system process that responds to patterns of events logged by the “logdaemon” process.

American Standard Code for Information Interchange

A standard code for data representation that represents alphanumeric characters as binary numbers. The code includes 128 upper- and lowercase letters, numerals, and special characters. Each alphanumeric and special character has an ASCII code (binary) equivalent that is 1 byte long.

analog

An analog signal, such as voice or music, that varies in a continuous manner. An analog signal may be contrasted with a digital signal, which represents only discrete

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announcement

A message the system plays to the caller to provide information. The caller is not asked to give a response. Compare to prompt.

API

Application programming interface

application

The automated transaction (interactions) among the caller, the voice response system, and any databases or host computers required for your business.

application administration

The component of the system that provides access to the applications currently available on your system and helps you to manage and administer them.

application verification

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ASI

analog switch integration

ASR

advanced speech recognition

asynchronous communication

A method of data transmission in which bits or characters are sent at irregular intervals and spaced by start and stop bits rather than by time. Compare to synchronous communication.

asynchronous data unit

An electronic communications device that allows computer systems to communicate over asynchronous lines more than 50 feet (15 m) in length.

automatic call distributor

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automatic number identification

A method of identifying the calling party by automatically receiving a string of digits that identifies the calling station of a particular customer.

B

back up

The preservation of the information in a file in a different location, so that the data is not lost in the event of hardware or system failure.

backing up an application

Using a utility that makes an archive copy of a completed application or an interim copy of an application in progress. The back-up copy can be restored to the system if the on-line version is damaged, or if you make revisions and want to go back to the previous version.

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batch file

A file containing one or more lines, each of which is a command executable by the UNIX shell.

BB

bulletin board

blind transfer protocol

A protocol in which a call is completed as soon as the extension is dialed, without having to wait to see if the telephone is busy or if the caller answered.

bps

bits per second

BRDG

call bridging process

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bundle

In the context of the Enhanced File Transfer package, this term is used to denote a single file, a group of files (package), or a combination of both.

byte

A unit of storage in the computer. On many systems, a byte is 8 bits (binary digits), which is the equivalent of one character of text.

C

call classification analysis

A process that enables application designers to use information available within the system to classify the disposition of originated and transferred calls. CCA is an optional feature package.

call data event

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called party number

The number dialed by the person making a telephone call. Telephone switching equipment can use this number to selectively route an incoming call to a particular department or agent.

caller

The party who calls for a service, gets connected to the system, and interacts with it. As the system can also make outbound calls for service, the caller can also be the person who responds to those outbound calls.

call flow

See transaction.

call progress tones

Standard telephony sounds that indicate the status of the call. These sounds include busy, fast busy, ringback, reorder, etc.

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cartridge tape drive

A high-capacity data storage/retrieval device that can be used to transfer large amounts of information onto high-density magnetic cartridge tape based on a predetermined format. This tape can be removed from the system and stored as a backup, or used on another system.

CAS

channel associated signalling

caution

An admonishment or advisory statement used in the system documentation to alert the user to the possibility of a service interruption or a loss of data.

CCA

call classification analysis

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central office

An office or location in which large telecommunication devices such as telephone switches and network access facilities are maintained. These locations follow strict installation and operation requirements.

central processing unit

See processor.

CGEN

Voice system general message class

channel

See port.

channel associated signaling

A type of signaling that can be used on E1 circuit cards. It occurs on channel 16

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cluster controller

A bisynchronous interface that provides a means of handling remote communication processing.

CO

central office

code excited linear prediction

A means of encoding analog voice signals into digital signals that provides excellent quality with use of minimum disk space.

command

An instruction or request the user issues to the system software to make the system perform a particular function. An entire command consists of the command name and options.

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configuration management

The component of the system that allows you to manage the current configuration of voice channels, host sessions, and database connections, assign scripts to run on specific voice channels or host sessions, assign functionality to SSP and E1/T1 circuit cards, and perform various maintenance functions.

connect and disconnect (C and D) tones

DTMF tones that inform the system when the attendant has been connected (C) and when the caller has been disconnected (D).

connected digits

A sequence of digits that the system can process as a group, rather than requiring the caller to enter the digits one at a time.

controller circuit card

A circuit card used on a computer system that controls its basic functionality and

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coresidency

The ability of two products or services to operate and interact with each other on a single hardware platform.

CPE

customer provided equipment or customer premise equipment

CPN

called party number

CPT

call progress tones

CPU

central processing unit

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crash

An interactive utility for examining the operating system core and for determining if system parameters are being exceeded.

CSU

channel service unit

custom speech

Unique words or phrases to be used in system voice prompts that Lucent Technologies custom records on a per-customer basis.

custom vocabulary

A specialized package of unique words or phrases created on a per-customer basis and used by WholeWord or FlexWord speech recognition.

CVS

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D

danger

An admonishment or advisory statement used in system documentation to alert the user to the possibility of personal injury or death.

data interface process

A software process that communicates with Script Builder applications.

database

A structured set of files, records, or tables.

database field

A field used to extract values from a local database and form the structure upon which a database is built.

database record

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database table

A structure, made up of columns and rows, that holds information in a database. Database tables provide a means of storing information that changes too often to "hard-code," or store permanently, in the transaction outline.

dB

decibel

DB

database

DBC

database checking process

DBMS

database management system

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DCP

digital communications protocol

debug

The process of locating and correcting errors in computer programs; also referred to as troubleshooting.

default

The way a computer performs a task in the absence of other instructions.

default owner

The owner of a channel when no process takes ownership of that channel. The default owner holds all idle, in-service channels. In terms of the IRAPI, this is typically the Application Dispatch process.

diagnose

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dial pulse recognition

A method of recognizing caller pulse inputs from a rotary telephone.

dialed number identification service

A service that allows incoming calls to contain information about the telephone number for which it is destined.

dial through

A capability provided by touch-tone and dial pulse recognition that allows callers to enter their responses during the prompt and have those responses recognized (similar to the Speak with Interrupt capability). See also barge-in and echo cancellation.

DIO

disk input and output process

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DMA

direct memory address

DNIS

dialed number identification service

DPR

dial pulse recognition

DSP

digital signal processor

DTE

data terminal equipment

DTMF

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dual tone multi-frequency

A touch-tone sound that is an audio signal including two different frequencies. *DTMF feedback* is the process of the “switch” providing this information to the system. *DTMF muting* is the process of ignoring these tones (which might be simulated by human speech) when they are not needed for the application.

dump space

An area of the disk that is fixed in size and should equal the amount of RAM on the system. The operating system “dumps” an image of core memory when the system crashes. The dump can be fetched after rebooting to help in analyzing the cause of the crash.

E

E&M

Ear and Mouth

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Ear and Mouth

A common T1 trunking protocol for connection between two “switches.”

EBCDIC

Extended Binary Coded Decimal Interexchange Code

echo cancellation

The process of making the channel quiet enough so that the system can hear and recognize WholeWord, FlexWord, and dial pulse inputs during the prompt. See also barge-in.

editor system

A system that allows speech phrases to be displayed and edited by a user.

EIA

Electronic Industries Association

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Enhanced Basic Speech

Pre-recorded speech available from Lucent Technologies in several languages. Sometimes called standard speech.

error message

A message on the screen indicating that something is wrong with a possible suggestion of how to correct it.

ESD

electrostatic discharge

ESS

electronic switching system

EST

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Enhanced Software Technologies, Inc.

Ethernet

A name for a local area network that follows IEEE standard 802.3. Supported implementations are 10BaseT and/or 100BaseT.

event

The notification given to an application when some condition occurs that is generally not encountered in normal operation.

EXTA

external alarms feature message class

external actions

Specific predefined system tasks that Script Builder can call or *invoke* to interact with other products or services. When an external action is invoked, the systems displays a form that provides choices in each field for the application developer to select. Examples are Call_Bridge, Make_Call, SP_Allocate, SR_Prompt, etc. In

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F

FCC

Federal Communications Commission

FDD

floppy disk drive

feature

A function or capability of a product or an application within the system.

feature package

An optional package that may contain both hardware and software resources to provide additional functionality to a standard system.

feature_tst script package

A standard system software program that allows a user to perform self-tests of

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field

See database field.

FIFO

first-in-first-out processing order

file

A collection of data treated as a basic unit of storage.

file transfer

An option that allows you to transfer files interactively or directly to and from UNIX using the file transfer system (FTS).

filename

Alphabetic characters used to identify a particular file.

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FTS

file transfer process message class

function key

A key, labeled F1 through F8, on your keyboard to which the system software gives special properties for manipulating the user interface.

G

GEN

PRISM logger and alerter general message class

grammar

The inputs that a recognizer can match (identify) from a caller.

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H

hard disk drive

A high-capacity data storage/retrieval device that is located inside a computer platform. A hard disk drive stores data on nonremovable high-density magnetic media based on a predetermined format for retrieval by the system at a later date.

hardware

The physical components of a computer system. The central processing unit, disks, tape, and floppy drives, etc., are all hardware.

hardware upgrade

Replacement of one or more fundamental platform hardware components (for example, the CPU or hard disk drive), while the existing platform and other existing optional circuit cards remain.

HDD

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Hz

Hertz

IBM

International Business Machines

iCk or ICK

The system integrity checking process.

ID

identification

IDE

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IE

information element

IEEE

Institute of Electrical and Electronic Engineers

IND$FILE

The standard SNA file transfer utility that runs as an application under CICS, TSO, and CMS. IND$FILE is independent of link-level protocols such as BISYNC and SDLC.

independent software vendor

A company that has an agreement with Lucent Technologies to develop software to work with the system to provide additional features required by customers.

indexed table

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INIT

voice system initialization message class

initialize

To start up the system for the first time.

inserv

in-service state

Integrated Services Digital Network

A network that provides end-to-end digital connectivity to support a wide range of voice and data services.

intelligent CCA

Monitoring the line after dialing is complete to determine whether a busy, reorder (fast busy), or other failure has been encountered. It also recognizes when the

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interrupt

The termination of voice and/or telephony functions when some condition occurs.

Intuity Response Application Programming Interface

A library of commands that provide a standard development interface for voice-telephony applications.

IOB

I/O companion card to the SBC. This is part of the CPU Complex.

IPC

interprocess communication

IPC

intelligent ports card (IPC-900)

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ISA

industry standard architecture

ISDN

Integrated Services Digital Network

ISV

independent software vendor

ITAC

International Technical Assistance Center

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keyboard mapping

In emulation mode, this feature enables the keyboard to send 3270 keyboard codes to the host according to a configuration table set up during installation.

keyword spotting

A capability provided by WholeWord speech recognition that allows the system to recognize a single word in the middle of an entire phrase spoken by a caller in response to a prompt.

L

LAN

local area network

LDB

local database

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LIFO

last-in-first-out processing order

line side E1

A digital method of interfacing a system to a PBX or “switch” using E1-related hardware and software.

line side T1

A digital method of interfacing a system to a PBX or “switch” using T1-related hardware and software.

listfile

An ASCII catalog that lists the contents of one or more talkfiles. Each application script is typically associated with a separate listfile. The listfile maps speech phrase strings used by application scripts into speech phrase numbers.

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LOG

System logger process message class

logical unit

A type of SNA Network Addressable Unit.

logdaemon

A UNIX system information and error logging process.

logger

See logdaemon.

logging on/off

Entering or exiting the system software.

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LSF1

LST1

line side T1

LU

logical unit

Lucent speech processing solutions II circuit card (6UB5)

A high-performance speech processing circuit card capable of simultaneous support for various speech technologies. In addition to the basic speech-processing features, The LSPS II circuit card provides enhanced Text-to-Speech capabilities and subword recognition for large vocabularies.

magnetic peripherals

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maintenance process

A software process that runs temporary diagnostics and maintains the state of circuit cards and channels.

manoos

manually out-of-service state

masked event

An event that an application can ignore (that is, the application can request not to be informed of the event).

master

A circuit card that provides clock information to the TDM bus.

Mbps

megabits per second

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megabyte

A unit of memory equal to 1,048,576 bytes (1024 x 1024). It is often rounded to one million.

menu

Options presented to a user on a computer screen or with voice prompts.

MF

multifrequency

MHz

megahertz

ms

millisecond

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MTC

maintenance process

multifrequency

Dual tone digit signaling (similar to DTMF), used for trunk addressing between network switches or by network operators.

multichannel application

A single process/application that controls several channels. Each channel of the application is managed explicitly. Typically this means state information for each channel is maintained and the state of the application on each channel is tracked.

N

NCP

Network Control Program

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netoos

network out-of-service state

non-facility associated signalling

NFS

network file sharing

NM-API

Network Management - Application Programming Interface

NMVT

network management vector transport

nonex

nonexistent state

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nonmasked event

An event that must be sent to the application. Generally, an event is nonmaskable if the application would likely encounter state transition errors by trying to it.

null value

An entry containing no value. A field containing a null value is normally displayed as blank and is different from a field containing a value of zero.

O

OEM

original equipment manufacturer

on-line help

Messages or information that appear on the user's screen when a function key (usually F1) is pressed.

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ORACLE

A company that produces relational database management software. It is also used as a generic term that identifies a database residing on a local or remote system that is created and maintained using an ORACLE RDBMS product.

P

PBX

private branch exchange

PC

personal computer

PCB

printed circuit board

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PCM

pulse code modulation

PEC

price element code

peripheral (device)

Equipment such as printers or terminals that is in addition to the basic processor.

peripheral component interconnect

A newer, higher speed PC bus that is gradually displacing ISA for many components.

permanent process

A process that starts and initializes itself before it is needed by a caller.

phoneme

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phrase filtering (screening)

The rejection of unrecognized speech. The WholeWord and FlexWord speech recognition packages can be programmed to reprompt the caller if the system does not recognize a spoken response.

phrase tag

A string of up to 50 characters that identifies the contents of a speech phrase used by an application script.

platform migration

See platform upgrade.

platform upgrade

The process of replacing the existing platform with a new platform.

pluggable

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PMC

PCI Mezzanine Card

poll

A message sent from a central controller to an individual station on a multipoint network inviting that station to send if it has any traffic.

polling

A network arrangement whereby a central computer asks each remote location whether it wants to send information. This arrangement enables each user or remote data terminal to transmit and receive information on shared facilities.

port

A connection or link between two devices that allows information to travel to a desired location. See telephone network connection.

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private branch exchange

A private switching system, either manual or automatic, usually serving an organization, such as a business or government agency, and usually located on the customer's premises.

processor

In system documentation, the computer on which UnixWare and system software runs. In general, the part of the computer system that processes the data. Also known as the central processing unit.

prompt

A message played to a caller that gives the caller a choice of selections in a menu and asks for a response. Compare to announcement.

pseudo driver

A driver that does not control any hardware.

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pulse code modulation

A digital modulation method of encoding voice signals into digital signals. See also adaptive differential pulse code modulation.

R

RAID

redundant array of independent disks

RAID Array

An assembly of disk drives configured to provide some level of RAID functionality

RAM

random access memory

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RDMRS

recognition type

The type of input the recognizer can understand. Available types include touch-tone, dial pulse, and Advanced Speech Recognition (ASR), which includes WholeWord and FlexWord speech recognition.

recognizer

The part of the system that compares caller input to a grammar in order to correctly match (identify) the caller input.

record

See database record.

recovery

The process of using copies of the system software to reconstruct files that have been lost or damaged. See also restore.

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reports administration

The component of a system that provides access to system reports, including call classification, call data detail, call data summary, message log, and traffic reports.

restore

The process of recovering lost or damaged files by retrieving them from available back-up tapes or from another disk device. See also “recovery.”

restore application

A utility that replaces a damaged application or restores an older version of an application.

reuse

The concept of using a component from a source system in a target system after a software upgrade or platform migration.

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roll back

To cancel changes to a database since the point at which changes were last committed.

rollback segment

A portion of the database that records actions that should be undone under certain circumstances. Rollback segments are used to provide transaction rollback, read consistency, and recovery.

RTS

request to send

S

SCA

single connector architecture

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screen pop

A method of delivering a screen of information to a telephone operator at the same time a telephone call is delivered. This is accomplished by a complex chain of tasks that include identifying the calling party number, using that information to access a local or remote ORACLE database, and pulling a “form” full of information from the database using an ORACLE database utility package.

script

The set of instructions for the system to follow during a transaction.

Script Builder

An optional software package that provides a menu-oriented interface designed to assist in the development of custom voice response applications on the system (see also Voice@Work).

SCSI

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shared database table

A database table that is used in more than one application.

shared speech

Speech that is a part of more than one application.

shared speech pools

A parameter that allows the user of a voice application to share speech components with other applications.

SID

station identification

single-threaded application

An application that runs on a single voice channel.

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small computer system interface

A disk drive control technology in which a single SCSI adapter circuit card plugged into a PC slot is capable of controlling as many as seven different hard disks, optical disks, tape drives, etc.

SNA

systems network architecture

SNMP

simple network management protocol

software

The set or sets of programs that instruct the computer hardware to perform a task or series of tasks — for example, UnixWare software and the system software.

software upgrade

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speech and signal processor circuit card (CWB1)

A high-performance signal processing circuit card capable of simultaneous support for various speech technologies.

speech energy

The amount of energy in an audio signal. Literally translated, it is the output level of the sound in every phonetic utterance.

speech envelope

The linear representation of voltage on a line. It reflects the sound wave amplitude at different intervals of time. This envelope can be plotted on a graph to represent the oscillation of an audio signal between the positive and negative extremes.

speech file

A file containing an encoded speech phrase.

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speech modeling

The process of creating WholeWord speech recognition algorithms by collecting thousands of different speech samples of a single word and comparing them all to obtain a statistical average of the word. This average is then used by a WholeWord speech recognition program to recognize a single spoken word.

speech space

An area that contains all digitized speech used for playback in the applications loaded on the system.

speech phrase

A continuous speech segment encoded into a digital string.

speech recognition

The ability of the system to understand input from callers.

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SQL

structured query language

SR

speech recognition

SSP

speech and signal processor circuit card (CWB1)

standard speech

The speech package available in several languages containing simple words and phrases produced by Lucent Technologies for use with the system. This package includes digits, numbers, days of the week, and months, each spoken with initial, medial, and falling inflection. The speech is in digitized files stored on the hard disk to be used in voice prompts and messages to the caller. This feature is also called Enhanced Basic Speech.

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string

A contiguous sequence of characters treated as a unit. Strings are normally bounded by white spaces, tabs, or a character designated as a separator. A string value is a specified group of characters symbolized by a variable.

structured query language

A standard data programming language used with data storage and data query applications.

subword technology

A method of speech recognition used in FlexWord recognition that recognizes phonemes or parts of words. Compare to WholeWord speech recognition.

switch

A software and hardware device that controls and directs voice and data traffic. A customer-based switch is known as a private branch exchange.

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switch hook flash

A signaling technique in which the signal is originated by momentarily depressing the “switch hook.”

switch interface administration

The component of the system that enables you to define the interaction between the system and switches by allowing you to establish and modify switch interface parameters and protocol options for both analog and digital interfaces.

switch network

Two or more interconnected telephone switching systems.

synchronous communication

A method of data transmission in which bits or characters are sent at regular time intervals, rather than being spaced by start and stop bits. Compare to asynchronous communication.

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system administrator

The person assigned the responsibility of monitoring all system software processing, performing daily system operations and preventive maintenance, and troubleshooting errors as required.

system architecture

The manner in which the system software is structured.

system message

An event or alarm generated by either the system or end-user process.

system monitor

A component of the system that tests to verify that each incoming telephone line and its associated Tip/Ring or T1 circuit card is functional. Through the “System Monitor” component, you are able to see displays of the Voice Channel and Host Session Monitors.

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table

See database table.

talkfile

An ASCII file that contains the speech phrase tags and phrase tag numbers for all the phrases of a specific application. The speech phrases are organized and stored in groups. Each talkfile can contain up to 65,535 phrases, and the speech filesystem can contain multiple talkfiles.

talkoff

The process of a caller interrupting a prompt, so the prompt message stops playing.

TAM

telecom alarm module

target system

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TCP/IP

transmission control protocol/internet protocol

TDM

time division multiplexing

telecom alarm module

An intelligent alarm module that provides critical, major, and minor alarm indicators.

telephone network connection

The point at which a telephone network connection terminates on a system. Supported telephone connections are Tip/Ring, T1, and E1.

Text-to-Speech

An optional feature that allows an application to play US English speech directly from ASCII text by converting that text to synthesized speech. The text can be used for

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ThinNet

A 5-mm (10BASE2) coaxial cable used to provide interLAN communications.

time-division multiplex

A method of serving a number of simultaneous channels over a common transmission path by assigning the transmission path sequentially to the channels, with each assignment being for a discrete time interval.

Tip/Ring

Analog telecommunications using four-wire media.

token ring

A ring type of local area network that allows any station in the network to communicate with any other station.

trace

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transaction

The interactions (exchanges) between the caller and the voice response system. A transaction can involve one or more telephone network connections and voice responses from the system. It can also involve one or more of the system optional features, such as speech recognition, 3270 host interface, FAX Actions, etc.

transaction assembler script

The computer program code that controls the application operating on the voice response system. The code can be produced from Voice@Work, Script Builder, or by writing directly in TAS code.

transaction state machine process

A multi-channel IRAPI application that runs applications controlled by TAS script code.

transient process

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TSO

time share operation

TSM

transaction state machine process

TTS

Text-to-Speech

TWIP

T1 interface process

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US

United States of America

UNIX Operating System

A multiuser, multitasking computer operating system originally developed by Lucent Technologies.

UNIX shell

The command language that provides a user interface to the UNIX operating system.

upgrade scenario

The particular combination of current hardware, software, application and target hardware, software, applications, etc.

usability

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UVL

unified voice library

V

VDC

video display controller

vi editor

A screen editor used to create and change electronic files.

virtual channel

A channel that is not associated with an interface to the telephone network (Tip/Ring, T1, LSE1/LST1, or PRI). Virtual channels are intended to run “data-only” applications which do not interact with callers but may interact with DIPs. Voice or network functions (for example, coding or playing speech, call answer, origination, or

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vocabulary activation

The set of active vocabularies that define the words and wordlists known to the FlexWord recognizer.

vocabulary loading

The process of copying the vocabulary from the system where it was developed and adding it to the target system.

Voice@Work

An optional software package that provides a graphical interface to assist in development of voice response applications on the system (see also Script Builder).

voice channel

A channel that is associated with an interface to the telephone network (T1, E1, or PRI). Any system application can run on a voice channel. Voice channel applications can be initiated by being assigned to particular voice channels or dialed numbers to

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voice response output process

A software process that transfers digitized speech between system hardware (for example, Tip/Ring and SSP circuit cards) and data storage devices (for example, hard disk, etc.)

voice response unit

A computer connected to a telephone network that can play messages to callers, recognize caller inputs, access and update a databases, and transfer and monitor calls.

voice system administration

The means by which you are able to administer both voice-related aspects of the system.

VPC

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W

warning

An admonishment or advisory statement used in system documentation to alert the user to the possibility of equipment damage.

watchdog timer

An timer that activates a TAM alarm when CPU activity is not received within the 30-second threshold.

WholeWord speech recognition

An optional feature package based on whole-word technology that can recognize the numbers one through zero, “yes”, and “no” (the key words). This feature is reliable, regardless of the individual speaker. This feature can identify the key words when spoken in phrases with other words. A string of key words, called *connected digits*, can be recognized. During the prompt announcement, the caller can speak or use touch tones (or dial pulses, if available). See also whole-word technology.

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word

A unique utterance understood by the recognizer.

wordlist

A set of words available for FlexWord recognition by an application during a Prompt & Collect action step.

word spotting

The ability to search through extraneous speech during a recognition.

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